TABLE 12.4.1

Regions of origin of furniture imports for the five largest importing countries 1996 and 2000

		USA		Germany		France		UK		Japan	
Regions		1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
Asia	%	44.3	47.0	4.5	9.2	8.3	14.4	22.4	31.4	68.3	79.6
North America	%	23.1	23.8	0.5	0.4	0.8	0.9	3.6	3.6	8.5	4.7
EU/EFTA	%	20.4	18.4	61.2	45.4	77.8	67.6	57.2	47.1	21.5	14.7
Eastern Europe & Russia	%	0.7	1.4	28.8	41.2	8.0	10.2	5.4	8.7	0.8	0.5
Latin America	%	9.6	8.5	2.0	1.5	3.3	5.0	3.1	3.6	0.1	0.1
Others	%	1.8	1.1	2.9	2.4	1.8	1.9	8.3	5.6	0.8	0.4
Total imports, billions	$	4.6	9.5	3.6	2.8	1.8	1.9	1.0	1.8	1.6	1.6

Source: UN COMTRADE, 2002.

TABLE 12.4.2

Regions of origin of Builders Joinery and Carpentry imports for the five largest importing countries, 1996 and 2000

		USA		Germany		France		UK		Japan	
Regions		1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
Asia	%	12.0	12.2	10.5	12.9	12.3	15.8	29.9	21.4	29.6	30.3
North America	%	69.2	68.2	1.2	0.5	1.6	1.1	4.1	7.1	49.0	26.4
EU/EFTA	%	6.6	5.9	62.3	49.8	78.2	72.8	45.2	50.0	14.7	35.0
Eastern Europe & Russia	%	-	0.5	17.6	29.4	2.9	5.9	3.3	6.3	-	2.1
Latin America	%	11.7	12.1	0.2	0.3	2.1	3.0	11.5	6.8	0.4	0.2
Others	%	0.5	1.0	8.2	7.1	2.9	1.3	6.1	8.3	6.3	6.0
Total imports, billions	$	0.70	1.65	1.21	0.82	0.16	0.22	0.28	0.41	0.57	0.53

Source: UN COMTRADE, 2002.

This is not surprising, because profiled wood and BJC are both structural products, which follow similar demand dynamics (driven largely by new construction and renovation activity).

12.4 Changing origins of imports in 1996-2000

12.4.1 Wooden furniture

In terms of percentage breakdown of wooden furniture imports by origin, the five main importing countries show a mixed picture (table 12.4.1). The most balanced situation prevails in the United States market, where Asian sources (predominantly China) account for 47% of imports, while Canada and Europe (EU and EFTA) supply 24% and 18%, respectively. Latin America is also important with an 8.5% share, decreasing slightly from 1996.

In Europe, the intra-regional trade is much more prominent with EU/EFTA Europe supplying as much as two thirds of the French imports, and slightly less than half of the German and United Kingdom imports of wooden furniture. Asian influence has grown in all three markets, albeit to a lesser degree than in the United States. Central and eastern European countries have become a more important source for Germany's imports, but not for France and the United Kingdom.

Finally, Asia dominates the Japanese imports with a nearly 80% market share, while Europe supplies much of the remaining imported furniture.

12.4.2 Builders' joinery and carpentry

In BJC, Japan has moved towards the most balanced import supply, where three regions supply roughly equal shares of the total imports. North America has lost one half of its export value to Japan between 1996 and 2000, but the EU/EFTA region has more than doubled its BJC exports to Japan (table 12.4.2).

TABLE 12.4.3

Regions of origin of profiled wood imports for the five largest importing countries 1996 and 2000

		USA		Germany		France		UK		Japan	
Regions		*1996*	*2000*	*1996*	*2000*	*1996*	*2000*	*1996*	*2000*	*1996*	*2000*
Asia	%	15.4	18.0	4.6	11.3	3.5	6.2	25.4	25.1	62.2	70.3
North America	%	33.3	28.7	3.7	1.5	3.8	2.0	10.0	15.8	29.8	16.3
EU/EFTA	%	3.1	4.1	72.4	60.9	73.4	74.1	59.8	53.5	5.1	10.5
Eastern Europe & Russia	%	0.2	0.6	15.1	22.7	6.2	9.5	1.1	1.8	-	-
Latin America	%	44.5	43.0	0.3	0.6	11.2	5.6	1.6	2.1	0.4	0.8
Others	%	3.6	5.6	3.8	3.1	1.9	2.6	2.1	1.5	2.4	2.1
Total imports, billions	$	0.50	0.88	0.17	0.13	0.06	0.07	0.12	0.16	0.35	0.29

Source: UN COMTRADE, 2002.

In the United States, imports of BJC are mainly from Canada (68%), followed by Asia and Latin America (12% each). In Europe, intra-regional trade is flourishing particularly in France, which imports 73% of its needs from other EU/EFTA countries. In Germany and the United Kingdom, half of the total imports come from EU/EFTA. Central and eastern Europe again plays an important role in Germany's imports (23%), as these new exports show dramatic increases but upon small volumes. Asia has a 25% share of the imports to the United Kingdom in BJC.

12.4.3 Profiled wood

Profiled wood has become a major export business for Latin American suppliers, especially Mexico, Chile and Brazil, and the region holds a healthy 43% share of the United States imports, ahead of Canada (29%) and Asia (18%) (table 12.4.3). Latin American suppliers enjoy competitive advantages such as lower transportation and wood costs over their competitors in other regions. Much of the supply is based on large-scale mills producing mouldings of plantation timbers such as the pines of Chile and Brazil (mainly *Pinus radiata, taeda, elliottii, caribea* and *oocarpa*). In Brazil, the prime tropical hardwoods for mouldings are cambara, tatajuba, tauari, cedro, marupa, ipê, jatoba, angelim, curupixa and imbuia. Eucalyptus is increasingly seen as a low-cost alternative moulding species with an appearance making it suitable for competing with red oak, alder and cherry in the United States.In Europe, most of the profiled wood originates from within the continent, but the share of the EU-EFTA imports ranges from 74% in France, to 61% in Germany and 54% in the United Kingdom. In Germany, imports of profiled wood have grown only from Asia and eastern Europe. The United Kingdom imports higher shares from North America and Asia than Germany or France. The latter has become even more Euro-centric in its imports.

In Japan, Asian suppliers of profiled wood have increased their market shares to 70% of total imports, leaving 16% of the market to North America and 10.5% to Europe.

12.5 Trends in tropical products

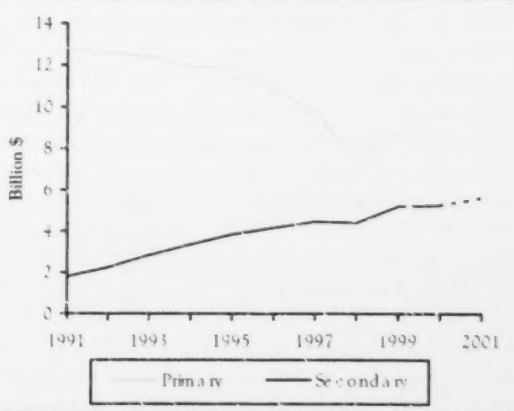
12.5.1 Mega-trends

ITTO consumer and producer countries account for 95% of the world's trade in tropical wood products, and this section, prepared together with ITTO, investigates the secondary processed wood trade of ITTO member countries.

The historical development of tropical wood imports by ITTO consumer countries shows a consistent growth trend for secondary-processed products (graph 12.5.1). Imports of primary products,

GRAPH 12.5.1

ITTO consumer imports of primary and secondary tropical timber products, 1991-2001



Note: 2000 and 2001 are estimates.
Source: ITTO, 2002.

TABLE 12.5.1

Major exporters of secondary products by ITTO producer countries 1996, 1999 and 2000
(Million $)

Exporter	1996	1999	2000	% change 1999 to 2000
Indonesia	1 532	1 693	1 988	17.4%
Malaysia	1 106	1 312	1 269	-3.3%
Thailand	741	846	978	15.7%
Brazil	451	584	687	17.6%
Philippines	378	378	449	18.8%
Bolivia	13	31	35	11.1%
Honduras	22	29	51	76.7%
Guatemala	14	20	18	-9.5%
ITTO Asia Pacific	3 768	4 251	4 685	10.2%
ITTO Latin America	545	716	791	10.5%
ITTO Africa	14	13	27	107.4%
ITTO Producers	4 327	4 980	5 538	11.2%

Source: ITTO, 2002.

on the contrary, have taken a declining path in the long-term, even though a recovery appeared in the meantime, bottoming out in 1998 during the Asian economic crisis. For the past few years, imports of primary tropical timber products have recovered in several countries and continue to surge in China. China remanufactures them into value-added products before re-exporting to industrialized countries.

The shift in tropical trade from primary products towards higher value added products is clear by looking at the figures of the year 1999. ITTO consumer countries imported secondary products from ITTO producers for $5.2 billion, which was 60% of their imports of primary tropical products from same area ($8.6 billion). This has clearly gone up from the 14% share in 1991. ITTO consumer imports of SPWPs from producer countries grew by about 26% between 1996 and 2000, which was faster than imports from all other sources.

Growing outsourcing of semi-finished products and components by the United States furniture industry has been a key driver for this trade. A great number of United States furniture manufacturers have transformed themselves into assembly plants, finishing lines or merely distributors and marketers of outsourced furniture and components from China and other countries, e.g. Brazil, Mexico and the Philippines. While sub-contracting the manufacturing processes to the lower-cost countries, United States firms still capture most of the value-adding potential in design, distribution and marketing functions, which they keep strictly under their control. The manufacturing process itself (particularly with standardized machinery) represents a lower value-added potential and is therefore easily sub-contracted anywhere in the world. Transportation costs of dry semi- or fully machined components are negligible in relation with their value.

China and Viet Nam are currently two of the lowest-cost manufacturing bases in Asia. They have seen a large number of foreign firms either re-locating production or jointly establishing factories in the hope of exploiting the conducive business conditions.

12.5.2 Major tropical exporters

Indonesia, Malaysia, Thailand, Brazil and the Philippines are the major ITTO producer member exporters of SPWPs (table 12.5.1). To put ITTO producer exports into a global perspective, Italy shipped over $5.8 billion worth of SPWP to global markets in 1999, about 15% higher than the combined value of all SPWP exports from all ITTO producer countries.

Although developing countries enjoy some degree of tariff relief under the Generalized System of Preferences (GSP) or other schemes for SPWP in many of the major markets, these benefits have been eroded by general tariff reductions in many countries through successive rounds of multilateral and bilateral trade negotiations. As the tariffs in general become lower, the advantage of being exempted from them under GSP or similar systems becomes smaller.

Tariffs in many countries remain high, however, compared to those for primary products like logs and sawnwood. This is one reason why the contribution of developing countries in total imports of such products by ITTO consumers is still below its potential. The European Union, Japan and the United States apply no import tariffs on SPWP from GSP countries, while rates for most other countries range from 2 to 6% on

TABLE 12.5.2

Exports of secondary products by ITTO producer countries by product group 1999
(Million $)

Exporter	Wooden furniture and parts	Builder's woodwork	Other SPWPs	Cane and bamboo furniture and parts
Indonesia	638	3	244	269
Malaysia	1 026	188	78	19
Thailand	572	40	223	11
Brazil	316	171	96	1
Philippines	119	76	53	131
Bolivia	11	20	0	0
Honduras	15	2	12	0
Guatemala	10	4	6	0
ITTO Asia Pacific	2 369	847	604	430
ITTO Latin America	377	210	127	2
ITTO Africa	8	1	5	0
ITTO Producers	2 754	1 058	736	432

Source: UN COMTRADE, 2002.

the major product categories. The United States, Canada, the European Union and Japan have proposed to eliminate completely all tariffs on wooden furniture by 2005, which will probably further boost SPWP exports from ITTO producer countries. In contrast, many developing countries retain very high tariffs (up to 80%) on SPWP imports.

12.5.3 *Major product categories for tropical exports*

The categories of SPWP for the major ITTO producer exporters show that the main types of SPWP produced and exported vary significantly from country to country (table 12.5.2). The major categories of Indonesia's exports, the largest SPWP producer and exporter, were wooden furniture (38%) and builder's woodwork (32%). Malaysia's SPWP exports are predominantly wooden furniture, about 70% of which is manufactured from rubberwood. Thailand has also linked the development of its furniture industry to its rubberwood resources, with all new sawmill licences now contingent on use of this material. The ban on logging in Thailand's native forests, imposed in 1991, has increased its dependence on imports as well as on former rubber plantations for wood supplies. Thai exports of SPWPs, which declined in 1997 and 1998 during the Asian economic crisis, recovered by 23% in 1999 and by a further 16% in 2000 owing to a boost in the exports of wooden furniture and parts. Thai (and Malaysian) SPWP exports also go mainly to the markets of the United States, Japan and Europe.

Both Thailand and Malaysia have gradually penetrated the higher value markets, particularly in Japan, with their rubberwood furniture. Regulations in both exporting countries favour further processing, restricting exports of raw rubberwood, although the restrictions have been relaxed in Malaysia because of imbalances in domestic supply and demand.

In contrast to its export performance from 1990 to 1995, when exports grew almost four-fold, Brazil's exports of SPWPs stabilized at well under $500 million until 1998, but then surged by 26% to over $584 million in 1999 and by a further 18% to $687 million in 2000. The major categories of Brazilian SPWP exports in 1999 were wooden furniture (54%) and builder's woodwork (29%). Brazil's SPWP exports go mainly to its major markets in the United States, Europe and Argentina.

The major categories of Africa's SPWP exports in 1999 were wooden furniture (58%) and packaging and pallets (and other manufactured products, 36%). African SPWP exports are mainly directed to the European Union (notably the United Kingdom) and United States markets. Asia-Pacific is by far the most important exporting region.

12.6 Engineered wood products markets[7]

This section focuses on the North American market for glulam, I-beams, and LVL. Unfortunately world trade data for engineered wood products (EWPs)

[7] Definitions and descriptions of engineered wood products may be found in the annex under "forest products terminology".

has not improved since the full chapter on "Engineered Wood Products – Production, Trade, Consumption, and Outlook" was published in the Forest Products Annual Market Review, 1999-2000. Most I-beams are still being produced in North America and the majority of structural LVL production takes place in North America. A new development is European glulam imported into the United States but since there are not yet customs classification codes to identify it, there are no reliable values or volumes of the trade (although from industry sources (anecdotal evidence or discussions with distributors) the imports are still small). APA—the Engineered Wood Association has initiated steps, in conjunction with UNECE and the European Union to implement a new harmonized code for glulam, but this could take some time.

Source: APA - the Engineered Wood Association, Regional Production and Market Outlook, APA Economics Report E68, 2002.

12.6.1 Glulam

North American glulam production fell almost 6% in 2001, owing to the slowdown in non-residential activity and exports (table 12.6.1). Developments in technology and product design continue to provide the basis for glulam market share gains over solid sawnwood and beams products. Innovation to obtain better properties is coming from glulam made with high quality southern pine beams made with LVL tension lams[5] (APA, Report E68, 2002). In addition, a new family of I-beam compatible glulam products is beginning to make market inroads in both residential and non-residential construction markets.

TABLE 12.6.1

North American glulam production and forecast, 2000-2003

(1000 m³)

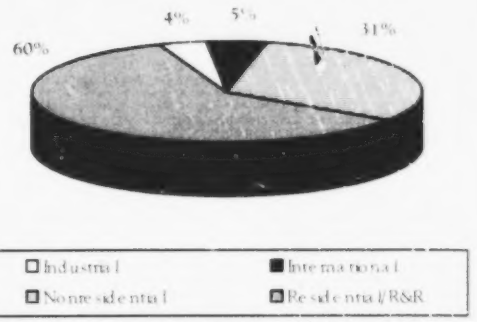
	2000	2001	2002	2003
USA	839.6	790.1	801.9	844.3
Canada	49.5	59.0	59.0	63.7
Total	889.2	849.1	860.8	908.0

Source: APA - the Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

Glulam end uses depend heavily on residential markets with the next largest segment being non-residential applications (graph 12.6.1). Within the residential sector, support beam, such as garage door

GRAPH 12.6.1

Glulam end uses in North America, 2001



Note: R&R is repair and remodelling.
Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

headers is the largest segment as it is increasingly being substituted for solid sawn and built up lumber products (APA 2002). Analysts had expected that North American exports to Japan would pick up as the new Japanese Housing Quality Assurance Law was implemented. However, Japanese domestic glulam and imports of European glulam have made significant inroads. Information from the Japanese Laminators Association indicates that domestic glulam production increased 26% in 2001 to a record 781,600 m³. At the same time, glulam imports from North America declined 8.3% to 71,571 m³ while imports from Europe and Russia increased to record levels for each country (APA 2002).

12.6.2 Wooden I-beams

After declining 3% in 2000, North American I-beam production increased 7% in 2001 to 282 million linear metres (table 12.6.2). APA expects production

TABLE 12.6.2

North American I-beam production and forecast, 2000-2003

(million linear metres)

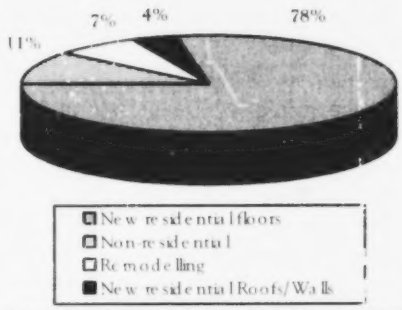
	2000	2001	2002	2003
USA	211	228	241	255
Canada	53	55	58	67
Total	264	282	299	322

Source: APA - the Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

[5] Tension lams are the external laminations in a glulam beam.

GRAPH 12.6.2

I-beam end uses in North America, 2001



Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

to exceed 1 billion linear feet (304 million linear metres) within the next year or two (APA Report E68). Market drivers include the need by builders for more predictable product performance, price stability and the need to reduce labour content and cycle time at the building site. Another driving force is to reduce waste volumes at building sites. For example, recent studies by the National Association of Homebuilders indicate that for every single-family home built in the United States, over 3.5 tons of waste is generated, and 38% of that is wood waste.

New residential floors dominate I-beam usage with 78%, followed by 11% in non-residential applications with the remainder going to new residential wall and roofs and remodelling (graph 12.6.2). The residential floor market will continue to be the main source of growth for several reasons: 1. houses are expected to continue to get bigger (an average of 214 m2 floor area in 2001); 2. Single-family housing maintains its dominant market share (about 75%) over the next decade; and 3. favourable demographics drive shelter demand to historical highs this decade. Although the I-beam share of raised floors was expected to increase from 40% in 2001 to 50% over the following few years as smaller builders discover the advantages big builders saw several years ago, growth rates for I-beam consumption will slow as the market matures by the end of the decade.

There will be a variety of alternative designs, ranging from LVL flanges with OSB webs, to machine stress rated (MSR) and conventional solid sawnwood flanges and more recently, TimberstrandTM or laminated strand lumber[9] (LSL) flanges. LSL is a relatively new EWP similar to OSB, but with longer flakes. These developments are aimed at providing the most efficient I-beam configuration for each application. Most of the trade in I-beams is cross border between Canada and the United States, with about 45% of Canada's production flowing to the United States.

12.6.3 Laminated veneer lumber

Laminated veneer lumber (LVL) production, mostly softwood, totalled 1.7 million m^3 in 2001, an increase of 13% from 2000 (table 12.6.3). The demand for LVL is driven primarily by residential construction activity as 50% is used to construct I-beam flanges and 43% is used in header and beam applications (graph 12.6.3). Future growth will be impacted from the shift by some I-beam producers to solid lumber flanges (primarily MSR sawnwood), while other producers use TimberstrandTM (laminated strand lumber) for the flange in lieu of LVL. The rationale is a better fit of the product properties to the end use application. Therefore, future growth will probably be concentrated in the beams and header market where LVL has strong performance advantages over built-up, softwood dimension lumber[10] and solid sawn beams. Recent market studies by APA show LVL use in U.S. residential construction in 2000 has grown to 21% of all beams, 23% of all garage door headers[11] and 8% of all window, door, and fireplace headers. Another opportunity is the rapidly growing demand for LVL beams in industrial applications.

TABLE 12.6.3

North American LVL production and forecast, 2000-2003

(1000 m^3)

	2000	2001	2002	2003
USA	1 348	1 513	1 637	1 731
Canada	125	156	176	252
Total	1 473	1 669	1 813	1 983

Source: APA - the Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

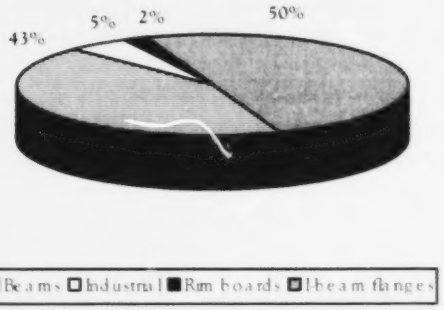
[9] "Lumber" is used synonymously with sawnwood.

[10] Softwood dimension lumber is a North American term referring to sawnwood of specific, generic sizes used in construction, e.g. 2x4s.

[11] Headers are structural beams bridging doors, windows and other openings.

GRAPH 12.6.3

LVL end uses in North America, 2001



Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

12.6.4 Outlook for engineered wood products

LVL and I-beams continue to enjoy better growth opportunities than glulam, with expected growth from 2001 to 2003 being 7%, for glulam, 14% for I-beams, and 19% for LVL (APA, 2002). However, North America is expecting weaker near-term demand and supply as recent capacity increments have outstripped demand growth. In fact, Weyerhaeuser, a major manufacturer of I-beams and LVL, recently announced the closure of two EWP facilities – a combined glulam and I-beam plant in Louisiana, and an I-beam plant in Oregon. Consolidation in the forest products industry is being driven by the industry-wide need to reduce overcapacity in many products. The recent Weyerhaeuser and Willamette merger created the world's largest EWP manufacturer. The new company intends to balance capacity to meet customer demand while achieving acceptable margins for shareholders. In essence, EWPs are becoming a commodity in some applications like floor joists. However, the future for EWPs is bright as they provide builders with solutions to problems evolving from skilled labour shortages, the need to reduce construction site waste, and reduce cycle time at the construction site.

12.7 Conclusion

12.7.1 Competition between the UNECE region and emerging exporters

The intense competition between suppliers inside and outside the UNECE region has already led to several casualties. Particularly in the United States, a consolidation process has taken place among furniture makers, whereby only the fittest have lived on. Often the recipe for survival has been flavoured with lay-offs, restructuring and streamlining of operations. Foreign outsourcing, i.e., manufacturing some components abroad, is a key business strategy. In the last year, some of the largest United States furniture manufacturers collapsed, and some of the most famous brands were taken over by others.

More than 50 United States furniture plants had closed by the middle of 2001, and within the next ten years, it is probable that only a few major domestic furniture manufacturers will remain. These will likely be high-end producers who offer customisation and rapid delivery or who specialize in the highest quality (and price) furniture. Other United States furniture companies will more than likely shift their production to Asia and focus on marketing and distribution at home. However, as markets mature, retailers may increasingly source furniture directly from the foreign-based manufacturers, bypassing United States-based companies entirely. Early signs of a similar change are being seen in the kitchen cabinet industry, where many United States cabinet manufacturers are importing doors from overseas.

The years 2000 and 2001 witnessed a race of United States furniture companies into China to find reliable manufacturing partners, and ultimately, to gain a foothold in the Chinese domestic market-in-the-making. As soon as the Chinese distribution structures strengthen, growing imports of up-scale furniture can be expected. The 2008 Olympic games in Beijing will give an additional boost to construction, information technology and the service sectors, with multiplying effects on the consumption of furniture and value-added wood products.

In Europe, the scene has been perhaps less dramatic. However, the German furniture and joinery plants have been struggling over the past few years. This has been partly due to home-market sluggishness, but also associated with import pressure. Sometimes competition comes from plants in other countries belonging to German firms. The strengths of Europe's woodworking industries are generally well known: steady raw material base, technological lead, quality and design, brands, distribution (proximity), clustering and networking. Weaknesses are in labour and raw materials costs and substitution pressures, which result in low profitability of the industry.

In these conditions, EU/EFTA manufacturers have to compete against broadening imports from lower cost sources such as central and eastern European countries and Asia. A common answer to the challenge has been the participation of cost-competitive regions in the

supply chains. In the long term, in order to stay ahead of competitors from the emerging countries, the industry will have to:

- educate the consumers on its products and materials,
- cultivate home-base advantage, and
- invest in product development.

12.7.2 Market drivers and factors of change

The past decade has brought about significant changes in SPWP markets, for example in material compositions of furniture, competitive positions of producer countries and designs and finishes of furniture, as well as SPWP trading and promoting practices, networking and distribution patterns. In particular, the following factors are setting higher criteria for accurate market information on value-added wood products:

1. Growing out-sourcing of semi-finished products and components from developing countries.
2. Tightening environmental regulations and mounting pressure for certification and labelling requirements on furniture (especially in the United States in the next 2 to 3 years).
3. Substitution pressure from new material combinations (wood, natural fibres and synthetics).
4. Higher potential supply of and demand for more diversified products of sustainable plantation woods.
5. Adoption of Internet in export promotion, growing business-to-business electronic commerce, and centralized electronic procurement of operating supplies.
6. Consolidation of the largest distribution channels into cross-continental mega-chains.
7. Gradual lowering of import tariffs, which is sometimes counterbalanced by higher non-tariff barriers on trade.

The exporters from the industrialized world are in most cases better equipped to grasp these challenges and fit them into their competitive strategies. If well understood, these factors could rejuvenate their competitive advantages over developing countries. For tropical and other developing countries, the repercussions of these market drivers need to be better analysed and interpreted within the global trading system.

12.7.3 Implications for UNECE region

The impacts of the changing competitiveness among furniture and other value-added product manufacturers are felt in both the trade and industry communities of UNECE member countries. While impacts for traders and distributors may be primarily positive (bringing in more suppliers, diversifying product ranges, increasing buyers' bargaining power), the domestic manufacturers have come under increasing pressure. Meanwhile, some consumers benefit from lower prices and greater choice.

Fundamentally, the core of the power game is the question of more equitable sharing of income accruing from the consumption of value-added wood products between industrialized and developing countries. Even a short historical review in the world furniture and other secondary product markets implies that successful countries have been alert in responding flexibly to market opportunities, overcoming constraints, and have generally understood the necessity of moving from comparative advantages to competitive advantages.

A superior competitive position obtained from lower costs (labour, raw materials, energy, capital) or economies-of-scale in production no longer automatically confers competitive advantage in most industries because, in this era of globalization, companies can gain access to an optimal blend of inexpensive production factors, or can relocate their factories into regions that offer favourable conditions and costs. The competitive advantage of a company thus arises not only from the availability of low-cost inputs or the sheer size of the company, but rather from superior productivity in using those inputs, wherever they abound on the Earth's face. A practical example is when joint investments on new machinery or production lines are made in a developing country, the investors from the industrialized countries lend their capital against a lease of production time or capacity share of the machinery. Thus they ensure access to low-cost production base with state-of-the-art technology.

Most successful European furniture manufacturers realized a long time ago that their competitive advantages would have to be based on flexible but efficient production with the highest technological quality, superior design, innovative market promotion and swift distribution with minimal stock-keeping. In the developing countries, the example of Malaysia shows a different stance. As analysts like Dr. J. Ratnasingam from Universiti Putra Malaysia have confirmed:

"Until this point of time, the growth and development of the furniture industry in Malaysia has largely been driven by incremental capital inputs and supportive industrial policies. Hence, the contract-manufacturing base in the country has enjoyed economies of scale, leading to the rapid expansion in exports. The benefits of the economies of scale, which

translate into increased production efficiency, industrial networking and the rapid expansion of exporting capacity, are notable. However, the emergence of cheaper furniture producing nations such as China and Viet Nam, threatens the viability of the industry in the future, and the industry needs to shift into greater value added products."[12]

The way forward for Malaysia and other emerging exporters would be to take the necessary steps to move away from the strategy of original equipment manufacturing (OEM) towards original design manufacturing (ODM) and ultimately to original brand manufacturing (OBM). Profiled wood, low-cost furniture and components are typically OEM segments, where high-speed automated moulders and other high-tech machines are used with limited product design ambitions. Therefore, the production factor costs need to be pushed to the minimum (and maintained low) in order to stay competitive. Once this road to success has come to an end (owing to lower-cost competitors) designing more original products becomes a necessity in moving up in the value chain. Copying designs from competitors no longer confers lasting competitive edge. Moving to original design manufacturing is warranted, and it is currently taking hold in the furniture industries of the leading tropical countries. But the remaining third level of sophistication, original brand manufacturing, has remained an elusive target for most of the tropical countries. Marketing of branded furniture is, however, of growing importance in the international markets, and foremost in the highest-value segments. Not surprisingly, this top-market has remained best in the hands of domestic manufacturers in Europe and North America, where branding is part of the business philosophy

Another important implication for the manufacturing industry in Europe and North America is the fact that greatly expanded (albeit rather unconventional) trade flows of primary processed products will continue to emerge. Already today there is a significant flow of high-quality sawnwood and panels from the industrialized countries to those developing countries that sustain a potent, cost-efficient value-added industry with export orientation, or whose wood raw material is scarce. Buy-back of furniture or components often completes this two-way trade.

Interestingly, the central and eastern European producers have started to experiment processing tropical woods for furniture (e.g. Poland). Trade in most value-added wood products with the Middle East region is set to proliferate, as ambitious construction plans are being revealed e.g. in the United Arab Emirates.

On the tropical front, the development of new processing technologies (e.g. MDF with veneer lamination) and growing plantation supplies (e.g. plantation rubberwood, eucalyptus, acacia, teak and pine) are allowing the use of a wider range of species in furniture and other SPWP production. Consequently, steady increases in production and exports from the tropics can be expected. The contribution of SPWP to the forest sectors of ITTO producers and other developing countries will continue to grow rapidly in coming years, with corresponding reductions in production and especially exports of primary tropical timber products. This is likely to cement the firm competition from tropical SPWPs for UNECE region manufacturers. The overall balance of SPWP trade is moving in favour of the Southern hemisphere, where a green "wall of wood" is maturing in plantations of Oceania, Asia and Latin America[13]

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[12] Source: Ratnasingam, J. (Unpublished) *The Malaysian Rubberwood Furniture Industry: A Critical Evaluation*. Invited expert paper to ITC Executive Forum, September 2002.

[13] Plantation-grown wood fibre, both softwood and roundwood, is expected to expand rapidly from southern hemisphere plantations. For example, in Chile roundwood production is forecast to double in 15 years (see chapter 5) and New Zealand's available wood supply is forecast to increase by 80% in 2010 (see special chapter in the *Review 1998-1999*).

Chapter 13

China emerges as world's fastest growing market for tropical timber products!

Trends in the tropical timber trade[1]

Highlights

- Japan and China are the world's top two importers of tropical timber but these two markets are moving in very different directions: Japan towards a higher degree of processing and China towards sawlogs and veneer logs.
- Many producer countries continued their shift to secondary processed products exports in 2001.
- Tropical log exports fell 11% to 14.4 million m^3 in 2001.
- African exports of processed primary timber products exceeded log exports for the first time in 2001.
- Indonesian exports of sawnwood appear to have risen in 2001 reflecting new estimates based on trading partner reports.
- China's tropical plywood exports, based on imported logs, continue to soar, moving China past Brazil as the world's third largest exporter in 2001.
- Prices for tropical plywood continue to reach new lows due to depressed construction sectors in major importing markets and growing substitution by softwood plywood and other panels, such as OSB and thin MDF.
- Japan, the Republic of Korea and China are still dependent on tropical sources for over 90% of total plywood imports.
- Several ITTO producing countries, e.g., India, Thailand and the Philippines, have become major importers of tropical logs and sawnwood.

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Secretariat introduction

Once again, this analysis is possible thanks to the close cooperation with our colleagues in the International Tropical Timber Organization, specifically Drs. Steven E. Johnson and Michael J. Adams and Ms. Masaki Miyake. Drs. Johnson and Adams are the principal authors of the ITTO *Annual Review and Assessment of the World Timber Situation 2001* and *Market Information Service*, respectively, from which this chapter was drawn. Like our *Review*, ITTO's *Review* is the basis for a market discussion each May, which has also contributed to the updated analysis below.

Readers will note that some of the terminology differs slightly from the rest of the *Review* but the authors have focused the following analysis on the tropical trade developments of the UNECE region. ITTO categorizes its members into producer and consumer countries. Only ITTO member countries are covered, but ITTO membership constitutes 95% of the tropical timber production and trade.

In contrast to previous tropical chapters, production and consumption are not covered here. For a complete analysis of trends in the production and consumption, as well as trade of tropical timber in relation to global timber trends, see the *Annual Review and Assessment of the World Timber Situation 2001* prepared by the International Tropical Timber Organization. The *Review* can be found on the ITTO website (www.itto.or.jp) or by contacting the chapter authors (addresses on the previous page).

13.1 Introduction

In 2001 the global tropical timber sector continued to evolve following the severe market downturn of the late 1990s, with the important markets moving in different directions. China's increasing imports continued to drive the tropical log market, with the country soon set to become the largest importer of primary tropical timber products. However, a notable increase in Russian softwood log imports by China was also observed. Japan's tropical timber imports declined marginally in 2001, continuing a steady erosion of market share. Japan's domestic hardwood plywood production is plummeting, along with tropical log imports. Japan and China are the world's top two importers of tropical timbers, but as can be seen by the above examples, the two markets are moving in very different directions. The contrast between these two timber trade giants, in their consumption patterns, their market structure and their trading style, is having a major impact on the global timber trade, introducing new challenges for manufacturers and traders.

The Japanese domestic timber sector is also undergoing change: the consumption of tropical logs by domestic mills continues to decline while the demand for finished products is growing steadily. From discernable trends, Japanese production of softwood plywood, dependent on Russian and North American logs, will increase, while tropical hardwood plywood production will continue to decline.

China provides some sharp relief to the general story of decline: it is, in fact, the world's fastest-growing market for tropical timber products. The country imports more tropical than temperate timber, with tropical products accounting for about 60% of the value of all primary timber product imports. Total Chinese timber imports have doubled since 1993 led by increased (tropical and temperate) log imports, as noted above. This increase is the result of many factors, including explosive growth in per capita consumption, especially related to construction and housing development, a ban on logging, and a strong currency. Nevertheless, per capita consumption is well below that of the developed economies, suggesting potential for continued growth.

The global average annual consumption of timber per capita is around 0.68 cubic metres, whereas China's is only 0.12 cubic metres, or less than one fifth of the world average. However, consumption rates are rising quickly in cities such as Shanghai, Beijing and Guangzhou and by now may not be far off the world average.

Many tropical timber producer countries continued their shift to secondary processed product exports in 2001, with trade in these products continuing to rise towards the level of primary tropical timber products trade. The contribution of further processing to the wood product industries and related trade will continue to increase in producer countries. Based on past performance, the expected growth rate in exports of added value timber products from tropical countries will result in exports of $5.1 billion in 2001 and by 2003 up to $6.6 billion, with exports of primary products expected to remain stable (or decline slightly) below $10 billion over the same period.

13.2 Export trends

13.2.1 Logs

The contribution of logs to total tropical timber exports of ITTO producers (in terms of both value and roundwood equivalent volume) has fallen dramatically from over 60% in the 1980s to around 25% in 2001 (table 13.2.1). Only Africa continues to export a significant volume of logs compared to processed

Table 13.2.1

Composition of tropical timber exports by producing regions, 1999-2001

(1,000 m³ roundwood equivalent)

	Log production			Log exports			Processed exports			Total exports		
Region	1999	2000	2001	1999	2000	2001	1999	2000	2001	1999	2000	2001
Africa	12 174	13 286	12 554	4 540	5 043	4 244	3 910	4 470	4 831	8 450	9 513	9 075
Asia-Pacific	78 425	79 864	79 852	9 908	10 830	9 982	30 644	31 061	32 640	40 552	41 890	42 622
Latin America	32 267	32 521	33 388	227	224	178	3 509	4 112	4 308	3 736	4 336	4 485
Total	122 865	125 671	125 794	14 675	16 097	14 404	38 063	39 643	41 778	52 738	55 740	56 182

Note: Totals may not sum exactly due to rounding.

Source: ITTO, 2002.

products, as 34% of log production is exported. In 2001 African log exports comprised 48% of total roundwood equivalent export volume. Despite the continued significance of African log exports, 2001 marked the first time that the roundwood equivalent volume of exports of processed products exceeded that of logs. The Asia-Pacific region is rapidly replacing log exports with the export of processed products, spurred by Indonesian plywood exports and Malaysian exports of sawnwood, veneer and plywood. Asian log exports made up 26% of total Asian export volume in 2001 (13% of log production). Latin American tropical log exports are a small fraction of both production and total exports. Total roundwood equivalent export volume as a percentage of log production increased from 12% to 13% in Latin America, from 52% to 53% in Asia, and from 69% to 72% in Africa during the period from 1999 to 2001. Total ITTO producer member exports (roundwood equivalent) increased by 7%, from 52.7 million m^3 to 56.2 million m^3, for the same period, owing to the recovery of African and Asian log exports and increased sawnwood exports by all three regions.

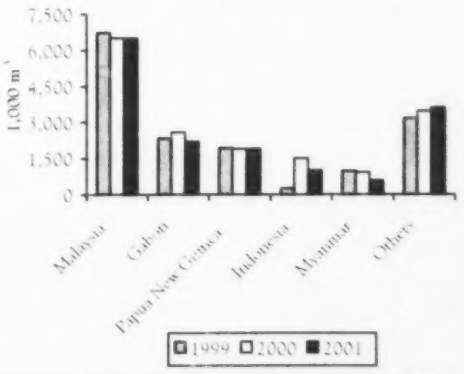
Log exports by producer members decreased by 11% in 2001 to 14.4 million m^3. Malaysia continues to dominate the trade in tropical logs with 6.5 million m^3 exported in 2001, constituting 45% of ITTO producer member exports (graph 13.2.1). Malaysia's major log customers are China (including Taiwan Province of China), Japan and India.

Papua New Guinea is the third largest tropical log exporter, with estimated 2001 exports of almost 1.9 million m^3, down by 2% from 1999 levels. Papua New Guinea's log exports remain far below the pre-Asian crisis level of almost 3 million m^3 per year. The bulk of its log exports go to Japan and the Republic of Korea. The Chinese market for its logs grew in 2001, mainly for lower grades. Log exports by Myanmar, the fifth largest log exporter in 2001, decreased by almost 40% in that year. Myanmar's main trading partners are India, Thailand and China.

Africa supplies the majority of the remainder of world tropical hardwood log exports. Gabon is the region's largest exporter (and ITTO's second largest), but the Congo, Liberia, Cameroon, the Central African Republic and Côte d'Ivoire also exported substantial quantities of logs in 2001. Gabon's exports fell 15% to under 2.2 million m^3 in 2001 as log export restrictions were implemented. Cameroon imposed limitations on exports of some species as far back as 1999, leading its exports to plunge by 38% in 2000 and a further 40% in 2001 to under 381,000 m^3. Ghana, a former top log exporter, banned exports of tropical hardwood logs in 1996. Liberia's civil war (which led to drastic decreases in official log production and exports for most of the 1990s) was resolved in 1998, leading to a resumption of log exports. Liberia's exports jumped by 206% in 2000 (to 637,000 m^3), with most of these logs destined for Europe, but in 2001 fell back to 409,000 m^3.

GRAPH 13.2.1

Major tropical log exporters, 1999-2001



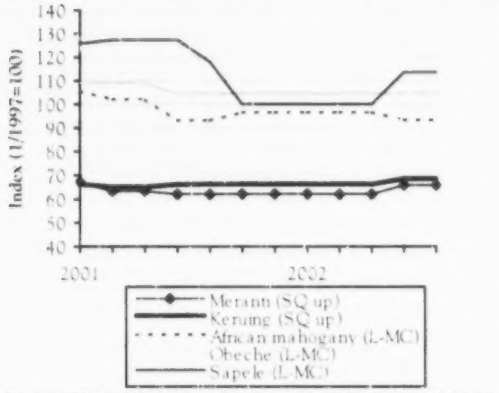
Source: ITTO, 2002.

13.2.2 Tropical log prices

After the sharp drop during the Asian crisis of 1997 and 1998, prices of most species of Asian logs have been recovering slowly (graph 13.2.2). Most have traded at real (1990) prices between $120 and $160/m³ from the end of 1998 through 2001, still a long way from 1996 and 1997 price levels. Kerung prices were relatively stable in 2001, trading at around $159/m³ at the close of the year. Meranti logs were trading at $164/m³ in the third quarter of 2000, when export markets (particularly China) increased orders, but declined steadily from the last quarter of 2000 and were trading at only $140/m³ in late 2001.

GRAPH 13.2.2

Tropical log price trends, 2001-2002



Note: FOB prices. SQ up is sawmill quality, L-MC is Loyale Merchant. Prices are from January 2001 through May 2002.
Source: ITTO, 2002.

Real FOB prices for most important species of African log exports were generally declining but fluctuated widely during the 2000-2001 period. Having followed an upward trend since mid-1999, real prices for African mahogany (acajou) peaked in mid-2000 at around $260/m³, before declining sharply during most of the last half of 2000. In late 2000 African mahogany prices were at $190/m³, a record low over the past decade, mainly as a result of a weakening of the French franc and the euro compared to the United States dollar. African mahogany prices rose gradually during the first quarter of 2001 and firmed at around $222/m³ before declining again during the second and third quarters to $187/m³, a new record low owing to lower demand in France and a perception in the European markets of high stocks in log yards. Prices remained relatively stable at this level to the end of 2001.

After peaking at $317/m³ in early 2000 as a result of a mid-1999 Cameroonian log export ban on several species, real prices for sapelli also declined sharply during most of the year to $256/m³ in November 2000, close to the lowest price for this species over the past decade. Sapelli prices rose gradually through the first quarter of 2001, firmed at around $304/m³ and fluctuated around that level during the second and third quarter of 2001. Sapelli prices dropped steeply at the end of 2001 to around $230 owing to depressed demand in Europe.

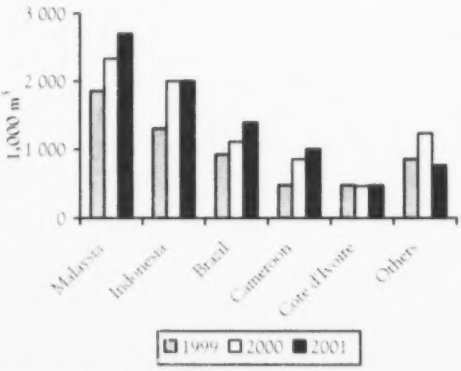
13.2.3 Sawnwood

Malaysia continues to dominate the trade in tropical sawnwood, with the 2.7 million m³ exported in 2001 constituting 31% of total ITTO producer member exports (graph 13.2.3). Malaysia's sawnwood customers are primarily Japan, Thailand, the Netherlands, the Republic of Korea and the large Chinese market (including Hong Kong Special Administrative Region and Taiwan Province of China).

Export estimates for Indonesian sawnwood have been adjusted to take into account trading partner reports. Based on this new information, Indonesian exports of sawnwood rose to 2 million m³ in 2001, a 54% increase over the figure reported in 2000. Indonesia's major sawnwood market is China, but its reported trade with China in 2001 was far smaller than China's reported imports. Cameroon's sawnwood exports have also grown sharply in recent years, jumping almost 80% in 2000 and a further 18% in 2001, reaching 1 million m³ as mills were able to benefit from restrictions on log exports. In addition to the top five exporters shown in the graph, Thailand

GRAPH 13.2.3

Major tropical sawnwood exporters, 1999-2001



Source: ITTO, 2002

and Ghana both exported over 200,000 m^3 of tropical sawnwood in 2001.

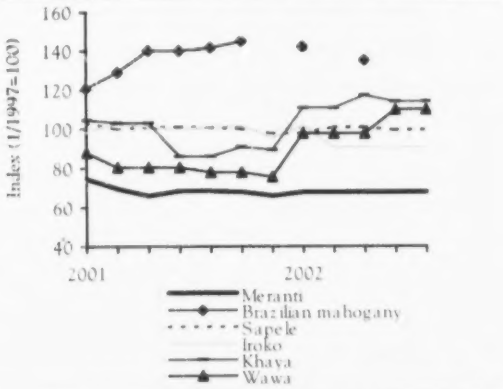
ITTO consumer countries exported 494,000 m^3 of tropical sawnwood in 2001, primarily (77%) from the European Union countries which accounted for 380,000 m^3 of the total. Belgium is the main European Union tropical sawnwood exporter with 190,000 m^3 in exports in 2001, followed by the Netherlands (60,000 m^3). The United States also exports substantial quantities of sawnwood produced from imported tropical logs, with 62,000 m^3 shipped in 2001.

13.2.4 Tropical sawnwood prices

African sawnwood prices were declining for several important species including mahogany (acajou or khaya) and wawa (obeche) in 2000-2001 (graph 13.2.4). After peaking at a record high of \$634/m^3 in April 2000 as a result of a boost in European Union furniture sector imports, real prices for mahogany (one of the most valuable African sawnwood export species) were declining for most of 2000, reaching \$538/m^3 by year-end. After a period of relative stability, prices of wawa rose slightly in the second half of 1999 and early 2000 to reach \$330/m^3 but declined gradually to \$258/m^3 in late 2000 as competition from lower-priced Asian sawnwood, temperate hardwoods and softwoods increased. Wawa sawnwood prices rose to \$295/m^3 in

GRAPH 13.2.4

Tropical sawnwood price trends, 2001-2002



Note: FOB prices. No data after March 2002 for Brazilian mahogany due to harvesting and export ban.
Source: ITTO, 2002.

early 2001, before declining to around \$235/m^3 by the end of the year.

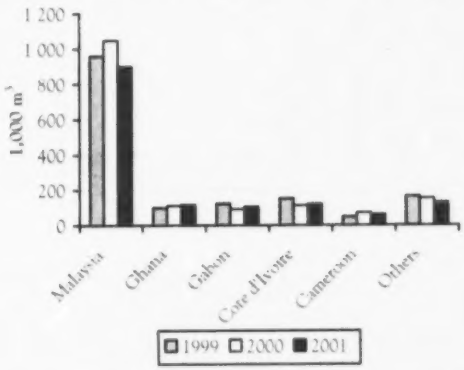
After reaching record highs in 1994, declining through 1995, firming in 1996 and then falling sharply in the second half of 1997 and first half of 1998 (during the Asian economic turmoil), prices of dark red meranti sawnwood firmed at around \$420/m^3 until the end of 2000. Prices of Malaysian meranti sawnwood declined steadily throughout 2001 as a result of market uncertainty and competition in some importing countries with increased sawnwood supply from Africa (mainly Cameroon). In contrast to other species, Brazilian mahogany sawnwood rose in 2001 and was trading at year-end at \$1,420/m^3, a record high. The price of mahogany is expected to increase further in 2002 owing to strong demand and limits on supply as a result of stricter forest management and export controls in Brazil.

13.2.5 Veneer

ITTO producer country veneer exports dropped 8% in 2001 to 1.6 million m^3. Malaysia continues to be the main veneer exporter, with exports of 900,000 m^3 in 2001 accounting for 63% of total ITTO producer member exports (graph 13.2.5). Malaysian exports are

GRAPH 13.2.5

Major tropical veneer exporters, 1999-2001



Source: ITTO, 2002.

mainly directed to China, the Republic of Korea, Taiwan Province of China, the Philippines and Japan.

Côte d'Ivoire was the second largest tropical veneer exporter in 2001 with exports of 120,000 m^3, an increase of 6% from 2000. Côte d'Ivoire's veneer markets are the European Union (mainly Germany, Italy, Spain and France) and the United States. Ghana overtook Gabon as the third largest ITTO tropical veneer exporter beginning in 2000 and exports grew steadily to 116,000 m^3 in 2001. Cameroon's veneer exports decreased by 15% to 60,000 m^3 in 2001.

The European Union accounted for 107,000 m^3 of total consumer country tropical veneer exports of 121,000 m^3 in 2001. France, Belgium, Spain, Germany and the Netherlands are the largest European Union

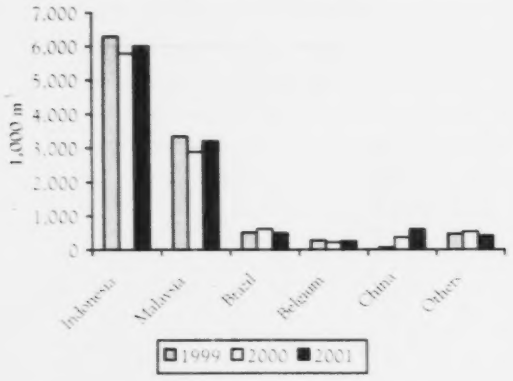
tropical veneer exporters. Consumer country exports of tropical veneer are often of much higher aggregate value than those from producer countries, although prices of individual species of tropical veneers are not regularly tracked by ITTO or others.

13.2.6 *Plywood*

Tropical plywood exports by ITTO producer member countries increased in 2001 to slightly over 10 million m^3, but were still well below the volumes exported prior to the Asian economic crisis of 1998. Indonesia remains the main tropical plywood exporter with 6 million m^3 exported in 2001, constituting 59% of total ITTO producer member exports (graph 13.2.6). However, Indonesia's proportion of the total has fallen from a high of 80% in 1992.

GRAPH 13.2.6

Major tropical plywood exporters, 1999-2001



Source: ITTO, 2002.

Malaysia is Indonesia's major competitor in the tropical plywood trade. Malaysian exports decreased by 14% to 2.9 million m^3 in 2000, but increased to 3.2 million m^3 in 2001. Malaysia was a major supplier of the Chinese plywood market and has been hard hit by that country's switch to log imports. Malaysia's rapid growth in plywood exports up to 1998 (when exports approached 4 million m^3) was due to the construction of new plywood mills in Sabah and Sarawak. These two eastern Malaysian states account for almost all of the country's plywood exports. Malaysia's exports were mainly to Japan, the Republic of Korea and the United States in 2001. Latin American plywood exports declined by 18% in 2001 to 586,000 m^3 owing to a 19% fall in Brazil's exports to 493,000 m^3. The United States and the European Union (mainly the United Kingdom, Germany and Belgium) are the major markets for Brazil's hardwood plywood. Africa's plywood exports remained relatively minor at 231,000 m^3 in 2001, but have grown rapidly in the past 5 years owing to increased exports from Côte d'Ivoire, Gabon and Ghana.

ITTO consumer country exports of tropical plywood rose 29% to almost 1.3 million m^3 in 2001, led by a steady increase of exports from China, with customs data suggesting that it replaced Brazil as the world's third largest tropical plywood exporter in 2001. The European Union also exported over half a million m^3 of tropical plywood in 2001.

The plywood trade in China has developed at a frantic pace. Imports have plummeted from around 1.5 million m^3 in 1997 (they had been as high as 2.3 million m^3 in 1993) to just 650,000 m^3 in 2001. In contrast, exports have defied gravity, leaping from less than 100,000 m^3 in 1993 to almost 1 million m^3 in 2001, with the majority of this tropical. According to customs data, Chinese plywood was exported to the following main markets in 2001: Republic of Korea – 206,000 m^3 (representing 21.3%), Hong Kong – 169,000 m^3 (17.5%), Japan – 121,000 m^3 (12.5%), the United States – 92,000 m^3 (9.5%) and Taiwan Province of China – 85,000 m^3 (8.8%).

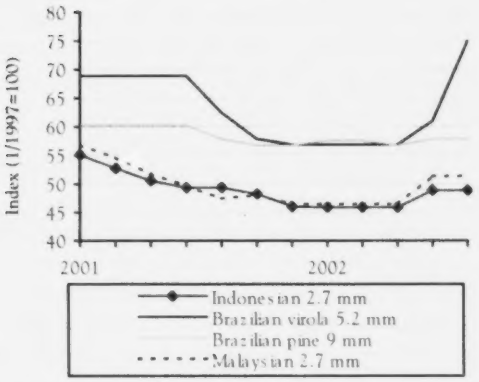
13.2.7 *Tropical plywood prices*

Prices for tropical plywood continue to reach new lows owing to depressed construction sectors in major importing markets and growing substitution by softwood plywood and other panels. After reaching record highs in 1996, declining through 1997 and the first half of 1998, and firming slightly in the second half of 1998 and 1999, prices of Indonesian BB/CC moisture resistant grade plywood stabilised in early 2000 at about \$388/m^3 and \$203/m^3 for 2.7 millimetre and 6-18 millimetre thicknesses, respectively. This stabilization was helped by a stronger yen and an active demand for thin plywood in China. Indonesian plywood export prices started declining steadily from mid 2000 and were trading at around \$221/m^3 and \$159/m^3 for the above thicknesses, respectively, in late 2001, record lows for these products (graph 13.2.7). These real price levels were only about 45-50% of the highs observed in 1996. Asian plywood prices have not recovered as a result of:

- Flat construction sectors in Japan and other southeast Asian consumers, as well as in Germany.
- A recent change in import tariff structures in China, which favours log over plywood imports.
- Increasing substitution by softwood plywood in many consuming countries, and strong competition from other wood-based panels.

GRAPH 13.2.7

Tropical plywood price trends, 2001-2002



Note: FOB prices.
Source: ITTO, 2002.

Malaysian plywood prices have closely tracked those for Indonesian products, as shown by the 2001 price trends (graph 13.2.7).

Brazilian plywood prices have also undergone significant declines but not as dramatic or consistent as their Asian competitors. Prices of white virola rebounded in late 2000 to $248/m^3 as volume shortages took effect and rose slowly through most of 2001, before declining to $231/m^3 in late 2001. Prices for Brazilian pine plywood (9+ millimetre), included here for comparison purposes, were less severely affected during the 1997 to 1998 market turbulence than Brazil's tropical exports, but prices are still at less than 60% of the pre-crisis levels.

13.3 Import trends

Of the ITTO consumer members, China, including Hong Kong Special Administrative Region and Taiwan Province of China, appears to be the most dependent on tropical imports, with a significant proportion of their substantial log, sawnwood, veneer and plywood imports of tropical origin (table 13.3.1). Major importers are defined here as those with imports of at least 100,000 m^3 of one or more tropical products. Unsurprisingly, given the dominance of tropical plywood in international plywood trade, most of the countries in the table have a fairly high dependence on tropical plywood imports, with the Republic of Korea, Japan and China dependent on tropical sources for over 90% of total imports (although this dependence is decreasing in the first two countries).

The products in which each country qualifies as a major importer are identified with the table in bold. Only China and Taiwan Province of China qualify as major importers of tropical timber under this criterion in all primary product categories.

Tropical sawnwood has a low market share in most non-tropical countries, with only China dependent on it for half or more of its sawnwood imports. Only Hong

Table 13.3.1

Tropical proportion of total imports by major ITTO importers, 2001
Proportion (%)

Consumer members	*Logs*	*Sawnwood*	*Veneer*	*Plywood*
Belgium	1.5	**17.6**	62.5	**78.7**
China	**45.8**	**52.4**	**91.0**	**92.2**
France	**39.4**	**11.5**	43.4	**29.7**
Germany	**4.1**	**2.8**	22.7	**16.3**
Hong Kong S.A.R.	**63.9**	**17.3**	18.8	**73.5**
Italy	**7.2**	**3.9**	13.9	14.5
Japan	**15.4**	**6.7**	40.9	**90.2**
Netherlands	20.0	**12.0**	16.7	**34.8**
Portugal	**37.4**	**18.5**	25.0	13.8
Rep. of Korea	**13.5**	**31.6**	**68.3**	**90.8**
Spain	**4.4**	**10.3**	42.3	4.9
Taiwan, P.O.C.	**76.0**	**18.4**	**85.9**	**85.1**
United Kingdom	3.2	**3.9**	25.0	**57.5**
United States	0.0	**0.7**	5.9	**63.5**
Producer Members				
Brazil	56.4	**99.0**	98.6	0.0
India	**86.5**	9.1	0.0	50.0
Malaysia	**94.7**	**98.9**	5.0	71.4
Philippines	**58.8**	**77.5**	**82.4**	75.0
Thailand	**86.7**	**87.0**	71.6	0.3

Note: Bold indicates qualification as a major importer
Source: ITTO, 2002

Kong Special Administrative Region and Taiwan Province of China among major consumers imported a greater proportion of tropical than non-tropical logs in 2001. In contrast to consumer countries, most of the major ITTO producer country importers depend on tropical imports for the majority of their imported wood needs. This is changing, however, with, for example, India, the Philippines and Thailand now sourcing substantial quantities of log imports from non-tropical areas.

13.3.1 Logs

Total imports of tropical hardwood logs by ITTO members remained stable at 18.1 million m^3 in 2001, about 16% (or 2.9 million m^3) greater than total log exports by all members. This gap between imports and reported exports could be explained by greater supplies from non-ITTO members, undocumented and illegal trade, forecasting errors, or most likely a combination of these. Differences between reported ITTO imports and exports is at least partially made up by legitimate log exports from non-members Equatorial Guinea and the Solomon Islands, with exports averaging about 400,000 m^3 per year each. Other non-member tropical log exporters are less significant and include Bangladesh (average annual exports around 100,000 m^3), Laos (80,000 m^3), Mozambique (50,000 m^3), Madagascar (40,000 m^3) and Viet Nam (30,000 m^3).

China overtook Japan in 1999 as the world's largest importer of tropical logs and maintained this position in 2001 when it imported about 7.3 million m^3 (up 20% from 2000), thus consolidating it as ITTO's largest tropical log importer with over 40% of total ITTO imports (graph 13.3.1). China's growing economy, a ban on domestic harvesting and a zero tariff on log imports were the main driving factors for this sharp rise. China's tropical log imports have soared more than five-fold in the last five years, with Malaysia, Gabon, Papua New Guinea and Indonesia being the main sources. China's import of non-tropical logs has also expanded rapidly, with Russia providing the bulk of total imports of about 7 million m^3 in 2001. Official Chinese statistics do not include Taiwan Province of China nor Special Administrative Regions Hong Kong and Macao, so the figures for these are based on trading partner reports and other unofficial sources.

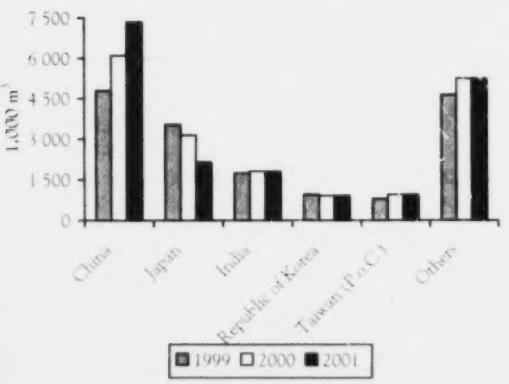
Since 1998, China has progressively phased out tropical plywood imports in favour of logs. The high levels of imports of low-cost plywood from Indonesia and Malaysia started to seriously undermine the competitive position of domestic manufacturers and many mills were forced to cut production, lay-off workers and even close. By removing import tariffs on logs (and by enforcing laws against plywood smuggling) this situation was addressed effectively. When the tariffs on logs were removed, local manufacturers were able to profitably use imported logs to fill the gap in log supplies created as a result of the drastic cuts in domestic log harvests as part of the country's new forest protection regulations. If China's log imports continue to grow as expected, China will soon replace Japan as the world's top log importer of both tropical and temperate logs.

Japan is the second largest ITTO tropical log importer, with imports of just over 2.1 million m^3 in 2001, down 32% from 2000 levels owing to its contracting economy, reduced supplies from Malaysia and an increasing reliance on softwood logs. Two thirds of Japanese demand for tropical logs continued to be met primarily by output from Malaysia in 2001, with logs from Papua New Guinea accounting for about one quarter of total imports and most of the remainder from Africa (mainly Gabon and Cameroon). Russia continued as Japan's major log supplier, with imports of over 5 million m^3 in 2001. Larch is the preferred species for plywood manufacture, and with prices below those of the cheapest tropical logs, it appears likely to gain further market share.

India is the third largest importer of tropical logs, at 1.8 million m^3 in 2001, mostly from Malaysia and Myanmar but with an increasing component of African logs. The Republic of Korea is also a major ITTO log importer, with almost 912,000 m^3 in 2001 as its economy continued recovering, with its major suppliers Papua New Guinea (35%) and Malaysia (35% of total imports, down from 71% in 1994). The Republic of Korea's imports of logs from Africa were 251,000 m^3 in 1995, but the ban on exports from Ghana (the Republic's main African supplier in that

GRAPH 13.3.1

Major tropical log importers, 1999-2001



Source: ITTO, 2002.

year) led to a sharp drop in imports from that continent. The Republic of Korea's current main African suppliers are Gabon and Cameroon, from which it now imports only minor quantities. A significant portion of the Republic's "other" tropical log supply is sourced from the Solomon Islands.

The European Union countries imported 2.4 million m^3 of tropical logs in 2001 (down 5% from 2000), most of which came from African producers. France remains the largest of the European Union log importers; its imports remained stable at 822,000 m^3 in 2001. The bulk of France's tropical log supplies comes from Gabon, Republic of Congo, Liberia and Cameroon. Portugal and Italy are also major European log importers, each with over 410,000 m^3 of log imports in 2001.

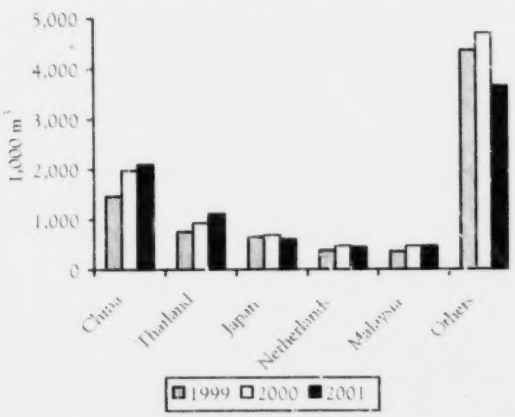
Several ITTO producing countries have become major importers of logs, indicating the extent of wood shortages in their domestic forest sectors. India (1,800,000 m^3), Malaysia (718,000 m^3), Thailand (464,000 m^3), and the Philippines (325,000 m^3) were the major ITTO producer country importers of tropical logs in 2001, reflecting resource scarcity and increased timber demand in these countries. Total imports of tropical logs by ITTO producing members, however, declined by 4% to just over 3.5 million m^3 in 2001.

13.3.2 Sawnwood

Total ITTO imports of tropical sawnwood decreased by 1.1% to 8.4 million m^3 in 2001. With 2001 imports of 2.1 million m^3, China is by far the top ITTO sawnwood importer (graph 13.3.2). China's imports surged 6% in 2001. China's tropical sawnwood imports are mainly from Indonesia (47%) and Malaysia (25%). The combined imports of China and Taiwan Province of China accounted for 38% of ITTO consumer imports in 2001. Thailand imported 1.1 million m^3 (up 20%) in 2001 as its large furniture and secondary processing industries continued to recover. Both Thailand's and Japan's tropical sawnwood imports are primarily from Malaysia (69% and 49%, respectively). Japan also imported substantial quantities of sawnwood from Indonesia (39%) in 2001. Japan remained ITTO's third largest tropical sawnwood importer in 2001, with imports decreasing by 12% to 605,000 m^3. Japanese imports of tropical sawnwood have fallen almost by half since 1996, while its imports of softwood lumber (primarily from Canada and increasingly from the Nordic Countries) remained at over 8 million m^3 in 2001.

GRAPH 13.3.2

Major tropical sawnwood importers, 1999-2001



Source: ITTO, 2002.

The Netherlands, Malaysia, Spain, Belgium, France, the United States, the United Kingdom and Taiwan Province of China, each with over 300,000 m^3 of tropical sawnwood imports in 2001, were also major importers. Imports by the Netherlands, Belgium, the United Kingdom and Taiwan Province of China were primarily from Malaysia and (to a lesser extent) Indonesia, while Malaysia's were from Indonesia, although no corresponding trade flow was reported by Indonesia. The tropical sawnwood market is the most diversified of all primary tropical timber products, with the five largest importers accounting for only half of total ITTO imports in 2001.

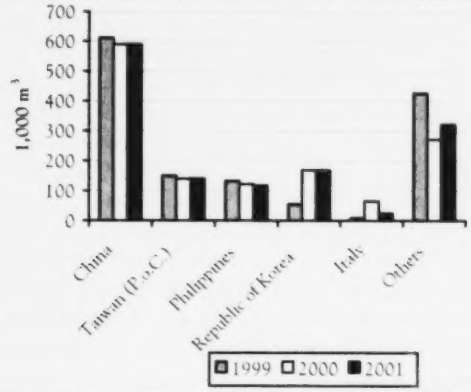
Total tropical sawnwood imports by European Union countries declined by almost 11% in 2001 to 2.5 million m^3, primarily as a result of decreased imports by Belgium, France and the United Kingdom. As stated above, Malaysia and Indonesia are the main sources for European Union imports, accounting for over half of the total. Côte d'Ivoire, Cameroon, Brazil and Ghana supplied virtually all of the remainder of European Union imports. The Netherlands is the largest importer of tropical sawnwood in the European Union, absorbing 450,000 m^3 in 2001. France (385,000 m^3) and Spain, Belgium and the United Kingdom (at 300,000 m^3 each) were other major European Union tropical sawnwood importers in 2001.

13.3.3 Veneer

Total ITTO imports of tropical veneer were stable at almost 1.4 million m^3 in 2001 due to steady imports of China and Taiwan Province of China's remaining stable (at 589,000 m^3 and 140,000 m^3 respectively) in 2001 (graph 13.3.3). The Republic of Korea's imports (168,000 m^3) also remained stable in 2001. Four out of the five top veneer importers are Asian countries. Imports by Asian countries are primarily sourced from Malaysia, while the majority of European imports are

GRAPH 13.3.3

Major tropical veneer importers, 1999-2001



Source: ITTO, 2002.

from African producers (mainly Côte d'Ivoire, but increasingly from Gabon and Ghana as well). The European Union absorbed 237,000 m^3 of tropical veneer in 2001, around one-fifth of total ITTO imports. Japan's tropical veneer imports decreased by 6% to 45,000 m^3 in 2001.

13.3.4 Plywood

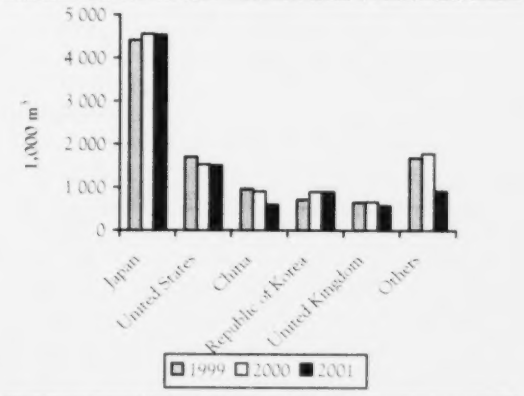
Total ITTO imports of tropical plywood declined by 5% to 10.2 million m^3 in 2001. The majority of all tropical plywood imports are sourced from Indonesia and Malaysia (60% and 39% respectively in 2000 for the top importer, Japan). Japan continues to replace domestic hardwood plywood production with softwoods, imported plywood (tropical and non-tropical) and substitutes like OSB and MDF. Its tropical imports decreased slightly by 1% in 2001, to 4.5 million m^3, due to its flat construction sector. The general trend towards increasing plywood imports by Japan is at least partially due to its difficulty in obtaining tropical logs for domestic production in the face of competition from China. Low prices also made imported plywood more attractive than domestic production in 2000 and 2001. Japan is now importing growing quantities of low-priced tropical plywood from China.

The United States was ITTO's second major plywood importer in 2001, with 1.5 million m^3, a drop of 2% from 2000 levels (graph 13.3.4). Of the United States tropical plywood imports, 43% was from Indonesia, 23% from Malaysia and most of the rest from Latin America. The Republic of Korea was ITTO's third largest tropical plywood importer in 2001 with 890,000 m^3. Korean tropical plywood imports have rebounded back to pre-crisis levels as its construction sector has recovered. Indonesia has traditionally supplied most of the Republic's plywood imports, but Malaysia has gradually increased its share from 18% in 1995 to over one third in 2001. China dropped to fourth largest tropical plywood importer with 600,000 m^3 in 2001. As noted above, Chinese imports have fallen to less than one third of 1998 levels as authorities have moved to increase domestic plywood production from imported logs to boost employment and offset reduced domestic log supplies. Tariffs on imported plywood are 15%, compared to zero for logs.

European Union imports of tropical plywood totalled just under 1.6 million m^3 in 2001, a 7% decrease from 2000 levels owing to declines in the United Kingdom, the Netherlands and Germany. European Union imports are led by the United Kingdom and the Netherlands. Most of the European Union's tropical plywood also came from Indonesia and Malaysia, with Brazil and inter-European trade also playing a fairly large role in many countries' imports. China continued to export small but growing amounts of tropical plywood to the European Union, particularly to its largest plywood importer, the United Kingdom. Taiwan Province of China (530,000 m^3) was also a substantial tropical plywood importer in 2001.

GRAPH 13.3.4

Major tropical plywood importers, 1999-2001



Source: ITTO, 2002.

13.4 Tropical timber trends

This concluding section briefly examines some important trends in the tropical timber sector that will continue to be felt in 2002 and beyond.

13.4.1 Chinese plywood exports

As noted in the section on plywood, China has converted from a major importer to a major exporter of this product in the space of a few years. First quarter 2002 Chinese customs statistics confirm that imports of plywood and veneer continued to fall. Imports of plywood fell from 194,000 m^3 in the first quarter last year to just 124,000 m^3 this year, a decline of 37%. On the other hand, exports of plywood continued to surge, with first quarter 2002 plywood exports up by 31% over the corresponding period of 2001.

China's plywood exports are largely made up of tropical species and rely on logs and veneer imported from Malaysia, Indonesia and other tropical countries in Asia and Africa. With exports of plywood likely to exceed 1 million m^3 this year, China has become a serious competitor in the global plywood market, especially in East Asia. Tropical plywood producers will be seeing more of their traditional markets under attack by low-priced Chinese exports in future.

13.4.2 Forest area changes

FAO's *Global Forest Resource Assessment 2000*, released in late 2001, shows that net tropical deforestation (i.e., deforestation minus forest extension, excluding plantations) slowed from 12.8 million hectares per year during the 1980s to 11.5 million hectares per year in the 1990s. Separating tropical countries into ITTO members and others shows that the annual rate of deforestation in ITTO member countries fell from 0.6 to 0.5% between the two decades, while that of other tropical countries increased, from 0.7 to 0.9%. While this trend is due to many factors (e.g. forests are generally more important in ITTO member countries, many other tropical countries have more dry zone forests which are more easily destroyed, and income and growth are generally lower in other tropical countries than in ITTO members), it is nonetheless encouraging.

The 2000 FAO *Forest Resource Assessment* also shows that global forest plantations increased by almost 12 million hectares per year in the 1990s, compared to less than 4 million hectares per year in the previous decade, with half of this phenomenal growth in Asia (primarily India, China and Japan). ITTO producer members established 1.7 million hectares per year of plantations during the 1980s, rising to 3.2 million annually in the 1990s. This compares to only 400,000 hectare per year by other tropical countries, and 1.8 million by non-tropical developing countries such as China. ITTO producer countries had 59 million hectares of plantations in 2000, approaching 5% of their total natural forest area.

With growth in area planted increasing by over 10% per year, plantations look set to play an ever-increasing role in the forest sector of tropical countries, especially in the development of capacity for secondary processed wood products (see chapter 12).

13.4.3 Illegal logging and trade and certification

The problem of illegal logging and trade in timber products has garnered substantial international exposure in recent years. While such problems can be found to some degree in almost all countries, the scope of illegal logging and its potentially devastating impact on forest resources in several tropical countries ensures that these countries will remain the focus of international attention. ITTO has been involved in several activities to combat these problems in member countries, most notably through a decision taken at the end of 2001 calling for more project funding for forest law enforcement and an innovative study that is currently under way to compare trading partner discrepancies with a view to identifying illegal trade. A dozen countries, including all major importers and exporters of tropical timber, have volunteered to participate in this study.

An integral part of any serious effort to combat illegal logging and trade is reliable auditing of forest operations and chain-of-custody verification. ITTO is supporting several country initiatives to develop credible forest auditing frameworks and has recently approved a set of guidelines for the development of such frameworks. Several tropical countries are also developing national certification schemes based on forest management auditing frameworks and ITTO's criteria and indicators. In 2001, both Malaysia's National Timber Certification Council and Indonesia's Eco-labeling Institute began steps to market certified tropical forest products with their own labels. While some countries are in negotiations with international accreditation bodies such as the Forest Stewardship Council (which has to date primarily awarded certificates in temperate forests), it appears unlikely that any one scheme will gain prominence in the tropics. The proliferation of national or regional schemes is therefore likely to continue, and will call for a framework for mutual recognition between schemes. ITTO has been active in attempting to facilitate agreement on such a framework, and will continue to support the efforts of tropical countries to monitor and report on the sustainable management of their forests.

Annexes

1. Apparent consumption tables

1. Roundwood apparent consumption
2. Sawn softwood apparent consumption
3. Sawn hardwood apparent consumption
4. Particle board apparent consumption
5. Plywood apparent consumption
6. Fibreboard apparent consumption
7. Chemical woodpulp apparent consumption
8. Paper and paperboard apparent consumption
9. Graphic papers apparent consumption
10. Sanitary and household papers apparent consumption
11. Packaging materials apparent consumption
12. Other paper and paperboard apparent consumption

2. Components of wood products groups

1. Roundwood flow chart
2. Wood-based panels flow chart
3. Wood pulp flow chart
4. Paper and paperboard flow chart

3. Forest products terminology

1. General terms and transactions
2. Primary products
3. Secondary processed wood products
4. Engineered wood products

4. Countries in the UNECE region and its subregions

5. Sources of information used in the *Forest Products Annual Market Review*

6. Special chapters in former *Forest Products Annual Market Reviews*

7. Some facts about the Timber Committee

8. UNECE/FAO publications

9. Reader survey

ANNEX TABLE 1

Roundwood apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	18 467	20 125	20 781	20 189	2 500.2	-2.8
Belgium & Luxembourg	6 781	...	...	...	...	...
Belgium	...	6 942	7 353	7 280	709.7	-1.0
Luxembourg	...	426	681	681	1 539.7	0.0
Denmark	2 074	2 023	3 040	2 501	469.0	-17.7
Finland	62 290	63 170	63 733	63 799	12 321.1	0.1
France	34 265	41 742	42 012	35 522	597.5	-15.4
Germany	36 454	35 792	51 702	36 646	446.9	-29.1
Greece	1 969	2 497	2 448	2 448	230.4	0.0
Iceland	4	4	4	4	13.6	0.0
Ireland	2 287	2 730	2 696	2 478	645.1	-8.1
Italy	14 990	16 443	15 600	13 145	228.6	-15.7
Liechtenstein	13	8	24	22	671.8	-8.3
Netherlands	1 221	1 239	1 232	1 266	79.4	2.7
Norway	11 198	10 926	10 990	10 748	2 394.9	-2.2
Portugal	10 087	9 854	11 603	11 386	1 134.9	-1.9
Spain	18 440	17 666	21 430	21 559	540.0	0.6
Sweden	68 446	67 793	75 256	73 240	8 291.6	-2.7
Switzerland	3 558	3 874	5 788	2 096	292.3	-63.8
United Kingdom	7 372	7 510	7 233	7 617	127.9	5.3
EU/EFTA	299 915	310 763	343 605	312 627	803.8	-9.0
Albania	28	230	447	459	145.8	2.7
Bosnia and Herzegovina	0	0	0	0	0.0	...
Bulgaria	2 975	4 176	4 529	3 769	479.1	-16.8
Croatia	3 231	3 265	3 421	3 546	761.8	3.7
Cyprus	35	36	23	21	27.0	-5.9
Czech Republic	12 114	12 222	13 365	12 865	1 253.9	-3.7
Estonia	2 484	3 068	4 825	8 900	6 463.3	84.5
Hungary	3 069	4 804	4 662	4 856	489.7	4.2
Israel	309	329	220	166	27.0	-24.5
Latvia	5 860	10 402	10 087	10 155	4 220.8	0.7
Lithuania	4 176	4 062	4 358	4 472	1 212.1	2.6
Malta	1	1	4	4	11.1	0.0
Poland	23 116	24 468	26 410	25 840	669.8	-2.2
Romania	11 490	12 102	12 634	12 337	551.1	-2.3
Slovakia	4 933	4 163	3 730	2 973	550.3	-20.3
Slovenia	2 102	2 233	2 445	2 375	1 196.7	-2.8
The fYR of Macedonia	697	825	1 091	749	366.7	-31.3
Turkey	18 921	19 040	18 666	17 091	252.7	-8.4
Yugoslavia	2 819	2 614	3 344	2 457	233.1	-26.5
OTHER EUROPE	98 360	108 041	114 260	113 037	556.0	-1.1
Belarus	5 081	5 877	5 296	5 291	521.5	-0.1
Republic of Moldova	403	78	89	87	20.3	-1.7
Russian Federation	74 281	115 473	126 378	123 896	856.4	-2.1
Canada	181 939	197 119	181 563	180 297	5 813.2	-0.7
United States	482 709	487 350	495 260	476 987	1 668.2	-3.7
NORTH AMERICA	664 647	684 469	676 823	657 284	2 073.8	-2.9

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 2

Sawn softwood apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	4 623	5 034	5 468	5 153	638.2	-5.7
Belgium & Luxembourg	2 069	...	...	...	...	...
Belgium	...	1 743	1 841	1 803	175.8	-2.0
Luxembourg	...	129	134	134	302.5	0.0
Denmark	4 010	4 752	3 571	4 239	794.9	18.7
Finland	4 187	4 660	5 178	4 762	919.6	-8.0
France	8 922	9 174	9 525	9 609	161.6	0.9
Germany	16 885	17 351	17 247	16 025	195.4	-7.1
Greece	465	662	648	648	61.0	0.0
Iceland	66	66	94	82	291.8	-12.8
Ireland	978	1 006	1 145	1 179	306.8	2.9
Italy	5 925	6 230	6 993	6 598	114.7	-5.6
Liechtenstein	...	...	...	...	...	...
Netherlands	2 854	2 832	2 935	2 934	184.2	0.0
Norway	2 752	2 356	2 493	2 575	573.8	3.3
Portugal	748	805	793	776	77.4	-2.2
Spain	7 150	4 038	4 659	4 659	116.7	0.0
Sweden	4 033	3 686	5 136	4 961	561.6	-3.4
Switzerland	1 501	1 551	1 659	1 476	205.9	-11.0
United Kingdom	8 621	8 885	9 503	9 423	158.3	-0.8
EU/EFTA	75 789	74 960	79 021	77 036	198.1	-2.5
Albania	15	21	53	53	16.9	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	176	128	107	95	12.1	-11.2
Croatia	218	225	225	225	48.2	0.0
Cyprus	82	82	49	69	87.6	41.0
Czech Republic	2 027	1 940	2 300	2 189	213.4	-4.8
Estonia	175	411	618	785	569.8	27.0
Hungary	724	789	1 024	1 024	103.3	0.0
Israel	368	383	334	334	54.1	0.0
Latvia	579	718	812	877	364.7	8.1
Lithuania	588	570	642	655	177.6	2.1
Malta	14	14	14	14	35.7	0.0
Poland	2 973	2 801	2 966	2 580	66.9	-13.0
Romania	247	352	401	465	20.8	15.8
Slovakia	133	182	194	282	52.1	45.2
Slovenia	327	174	128	99	49.9	-22.7
The fYR of Macedonia	60	78	152	86	42.3	-43.1
Turkey	2 283	2 470	3 253	2 400	35.5	-26.2
Yugoslavia	...	...	454	369	35.1	-18.5
OTHER EUROPE	10 988	11 337	13 725	12 602	63.3	-8.2
Belarus	1 305	1 186	677	726	71.5	7.2
Republic of Moldova	82	57	57	57	13.3	0.0
Russian Federation	10 984	10 514	10 091	10 404	71.9	3.1
Canada	12 622	15 044	14 924	11 985	386.4	-19.7
United States	88 254	92 294	91 674	91 634	320.5	0.0
NORTH AMERICA	100 876	107 338	106 598	103 619	326.9	-2.8

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 3

Sawn hardwood apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	292	322	335	332	41.1	-0.9
Belgium & Luxembourg	778	...	...	...	...	...
Belgium	...	481	508	528	51.4	3.9
Luxembourg	...	29	40	40	89.6	0.0
Denmark	259	161	153	209	39.2	36.6
Finland	106	105	153	153	29.6	0.1
France	3 072	2 980	2 966	3 104	52.2	4.7
Germany	1 494	1 874	1 526	1 427	17.4	-6.5
Greece	72	148	112	112	10.5	0.0
Iceland	3	3	0	0	0.0	...
Ireland	159	141	151	155	40.2	2.3
Italy	2 796	2 793	2 809	2 590	45.0	-7.8
Liechtenstein	...	...	...	...	...	...
Netherlands	621	701	777	777	48.7	-0.1
Norway	52	56	53	87	19.4	64.2
Portugal	544	559	647	606	60.4	-6.4
Spain	1 968	1 902	2 155	2 155	54.0	0.0
Sweden	352	368	340	340	38.5	0.0
Switzerland	253	250	227	176	24.5	-22.5
United Kingdom	596	613	747	778	13.1	4.1
EU/EFTA	13 417	13 486	13 699	13 568	34.9	-1.0
Albania	19	20	43	43	13.5	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	44	-70	-42	-36	-4.6	...
Croatia	122	136	136	136	29.2	0.0
Cyprus	19	17	25	16	20.9	-34.3
Czech Republic	357	360	364	369	36.0	1.4
Estonia	21	26	-52	15	10.7	...
Hungary	-19	68	90	90	9.0	0.0
Israel	21	102	120	120	19.5	0.0
Latvia	88	228	146	157	65.2	7.4
Lithuania	103	116	115	97	26.2	-15.8
Malta	8	8	8	8	20.4	0.0
Poland	578	613	575	671	17.4	16.9
Romania	413	554	679	765	34.2	12.6
Slovakia	137	49	206	234	43.3	13.7
Slovenia	113	128	164	184	92.8	12.0
The fYR of Macedonia	8	15	19	9	4.5	-52.1
Turkey	1 958	2 101	2 759	2 647	39.1	-4.1
Yugoslavia	...	...	178	150	14.2	-15.6
OTHER EUROPE	3 989	4 471	5 533	5 675	29.7	2.6
Belarus	740	365	490	496	48.8	1.2
Republic of Moldova	58	59	58	58	13.6	0.0
Russian Federation	3 747	2 169	2 166	1 874	13.0	-13.5
Canada	802	796	820	804	25.9	-2.0
United States	28 836	28 978	28 664	26 774	93.6	-6.6
NORTH AMERICA	29 638	29 774	29 484	27 578	87.0	-6.5

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 4

Particle board apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	684	816	898	841	104.2	-6.3
Belgium & Luxembourg	734	..	...	...	...	...
Belgium	...	1 018	730	739	72.0	1.2
Luxembourg	...	29	29	29	65.6	0.0
Denmark	706	734	865	896	168.0	3.6
Finland	300	295	306	268	51.7	-12.5
France	2 954	3 004	3 296	2 881	48.5	-12.6
Germany	9 500	9 417	9 867	8 548	104.2	-13.4
Greece	329	401	404	404	38.0	0.0
Iceland	15	15	19	16	56.9	-15.8
Ireland	164	240	181	174	45.3	-3.9
Italy	3 390	3 340	3 423	3 388	58.9	-1.0
Liechtenstein	...	...	..	...	...	..
Netherlands	643	668	668	624	39.2	-6.5
Norway	268	273	228	240	53.5	5.2
Portugal	408	471	431	493	49.1	14.3
Spain	2 361	2 964	3 578	3 578	89.6	0.0
Sweden	599	615	880	892	101.0	1.4
Switzerland	396	386	408	368	51.3	-9.8
United Kingdom	3 235	3 264	3 254	3 285	55.2	1.0
EU/EFTA	26 684	27 950	29 465	27 665	71.1	-6.1
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	..	...	...	...	...	...
Bulgaria	119	35	126	130	16.5	3.2
Croatia	79	89	89	89	19.1	0.0
Cyprus	40	40	50	46	58.5	-6.7
Czech Republic	327	478	542	585	57.0	7.9
Estonia	96	102	26	56	40.9	114.0
Hungary	377	401	439	439	44.3	0.0
Israel	124	138	155	155	25.1	0.0
Latvia	42	34	46	54	22.6	18.2
Lithuania	108	81	101	124	33.6	23.2
Malta	8	7	7	7	17.2	0.0
Poland	2 615	2 263	2 736	2 730	70.8	-0.2
Romania	264	295	298	377	16.8	26.7
Slovakia	262	303	16	91	16.8	468.8
Slovenia	219	239	354	432	217.9	22.0
The fYR of Macedonia	166	171	190	186	91.1	-2.0
Turkey	1 517	1 627	2 071	1 628	24.1	-21.4
Yugoslavia	105	104	100	118	11.2	18.7
OTHER EUROPE	6 469	6 405	7 345	7 249	37.0	-1.3
Belarus	342	251	196	250	24.6	27.2
Republic of Moldova	31	31	31	31	7.3	0.0
Russian Federation	1 709	2 057	2 430	2 854	19.7	17.4
Canada	1 873	2 941	2 820	2 761	89.0	-2.1
United States	24 631	28 300	29 431	29 873	104.5	1.5
NORTH AMERICA	26 504	31 241	32 251	32 634	103.0	1.2

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 5

Plywood apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	91	99	74	7	0.8	-90.8
Belgium & Luxembourg	227	...	...	...	...	...
Belgium	...	186	189	139	13.5	-26.5
Luxembourg	...	...	...	...	...	...
Denmark	278	168	222	319	59.8	43.7
Finland	186	160	197	190	36.7	-3.4
France	678	668	675	662	11.1	-2.0
Germany	1 367	1 225	1 296	1 171	14.3	-9.6
Greece	29	31	31	31	2.9	0.0
Iceland	1	1	2	2	7.1	0.0
Ireland	84	140	122	122	31.8	0.0
Italy	659	678	726	761	13.2	4.8
Liechtenstein	...	...	...	...	...	...
Netherlands	477	510	510	520	32.7	2.1
Norway	69	72	74	76	16.9	2.7
Portugal	35	42	56	53	5.3	-4.9
Spain	352	467	484	484	12.1	0.0
Sweden	170	192	225	208	23.5	-7.6
Switzerland	140	146	151	141	19.7	-6.6
United Kingdom	956	950	1 012	1 099	18.5	8.6
EU/EFTA	5 799	5 734	6 047	5 986	15.4	-1.0
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	22	23	12	31	3.9	158.3
Croatia	8	9	9	9	1.9	0.0
Cyprus	7	7	21	35	43.9	62.4
Czech Republic	46	44	47	84	8.2	78.7
Estonia	10	29	38	41	29.7	6.5
Hungary	49	30	31	31	3.1	0.0
Israel	117	160	175	175	28.3	0.0
Latvia	14	28	32	39	16.2	23.3
Lithuania	26	18	21	25	6.9	23.7
Malta	5	4	4	4	8.9	0.0
Poland	149	199	220	193	5.0	-12.1
Romania	37	32	27	31	1.4	16.1
Slovakia	77	93	98	145	26.8	48.0
Slovenia	30	51	35	39	19.6	12.5
The fYR of Macedonia	2	2	2	1	0.4	-61.5
Turkey	63	44	74	37	0.5	-50.0
Yugoslavia	...	...	13	11	1.0	-18.3
OTHER EUROPE	656	587	858	930	4.7	8.4
Belarus	61	47	23	44	4.3	93.0
Republic of Moldova	1	1	1	1	0.1	0.0
Russian Federation	395	414	548	594	4.1	8.5
Canada	1 568	1 494	1 533	1 670	53.9	9.0
United States	18 599	19 333	18 983	18 647	65.2	-1.8
NORTH AMERICA	20 167	20 827	20 516	20 317	64.1	-1.0

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 6

Fibreboard apparent consumption
(1,000 m^3)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	80	111	111	149	18.5	35.2
Belgium & Luxembourg	321	...	...	...	...	...
Belgium	...	317	647	616	60.0	-4.7
Luxembourg	...	...	...	...	...	...
Denmark	149	140	186	220	41.3	18.3
Finland	158	176	188	171	33.1	-8.9
France	640	654	814	816	13.7	0.1
Germany	1 643	1 987	2 079	1 738	21.2	-16.4
Greece	334	341	335	335	31.5	0.0
Iceland	4	5	7	6	20.6	-14.7
Ireland	100	127	163	159	41.4	-2.5
Italy	1 304	1 181	1 263	1 445	25.1	14.4
Liechtenstein	...	...	...	...	...	...
Netherlands	425	427	427	318	20.0	-25.4
Norway	134	57	102	99	22.0	-3.2
Portugal	160	221	281	271	27.0	-3.8
Spain	1 146	1 082	1 087	1 087	27.2	0.0
Sweden	200	251	274	248	28.1	-9.5
Switzerland	175	304	306	291	40.6	-5.0
United Kingdom	1 288	1 232	1 457	1 649	27.7	13.1
EU/EFTA	8 261	8 613	9 727	9 617	24.8	-1.1
Albania	...	0	0	0	0.1	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	55	19	195	241	30.7	23.7
Croatia	10	13	13	13	2.9	0.0
Cyprus	21	17	20	30	38.5	48.7
Czech Republic	92	96	135	190	18.5	40.7
Estonia	42	41	57	58	42.0	0.9
Hungary	24	31	36	36	3.7	0.0
Israel	141	162	147	108	17.5	-26.6
Latvia	11	17	14	14	5.7	0.8
Lithuania	35	30	49	46	12.3	-6.4
Malta	14	15	15	15	38.0	0.0
Poland	829	871	946	990	25.7	4.7
Romania	43	60	33	58	2.6	75.8
Slovakia	183	79	49	82	15.2	67.3
Slovenia	88	82	81	77	38.7	-5.2
The fYR of Macedonia	3	5	15	15	7.1	-4.9
Turkey	430	379	677	392	5.8	-42.1
Yugoslavia	32	35	22	44	4.1	99.5
OTHER EUROPE	2 053	1 953	2 505	2 409	12.1	-3.8
Belarus	-16	68	44	43	4.2	-3.6
Republic of Moldova	...	1	1	1	0.3	0.0
Russian Federation	499	560	715	779	5.4	9.0
Canada	574	553	782	513	16.5	-34.4
United States	7 584	7 886	9 075	9 039	31.6	-0.4
NORTH AMERICA	8 158	8 439	9 857	9 552	30.1	-3.1

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 7

Chemical woodpulp apparent consumption
(1,000 m.t.)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	1 420	1 336	1 455	1 367	169.3	-6.1
Belgium & Luxembourg	560	...	...	...	...	...
Belgium	...	518	596	649	63.2	8.9
Luxembourg	...	0	0	0	0.0	...
Denmark	47	53	44	39	7.3	-11.4
Finland	5 215	5 261	5 592	5 036	972.6	-9.9
France	3 398	3 430	3 709	3 483	58.6	-6.1
Germany	3 994	3 660	4 233	3 917	47.8	-7.5
Greece	126	129	127	127	11.9	0.0
Iceland	0	0	0	0	0.0	...
Ireland	17	20	17	17	4.4	0.0
Italy	3 020	3 083	2 958	3 112	54.1	5.2
Liechtenstein	...	...	...	...	...	...
Netherlands	832	629	436	435	27.3	-0.2
Norway	538	539	524	474	105.6	-9.5
Portugal	730	701	894	998	99.5	11.6
Spain	1 519	1 518	1 707	1 707	42.7	0.0
Sweden	4 979	5 028	5 548	5 237	592.9	-5.6
Switzerland	430	451	448	417	58.2	-6.9
United Kingdom	1 529	1 560	1 689	1 482	24.9	-12.3
EU/EFTA	28 355	27 916	29 976	28 496	73.3	-4.9
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	42	30	31	27	3.5	-12.8
Croatia	4	4	4	4	0.8	0.0
Cyprus	3	3	2	3	3.2	35.6
Czech Republic	367	368	391	401	39.1	2.6
Estonia	42	50	54	56	40.7	2.8
Hungary	170	175	164	164	16.6	0.0
Israel	107	110	124	124	20.0	0.0
Latvia	0	0	0	0	0.0	-36.4
Lithuania	3	1	2	4	1.0	143.0
Malta	0	0	0	0	0.9	0.0
Poland	845	885	959	995	25.8	3.8
Romania	157	135	180	168	7.5	-6.8
Slovakia	229	421	508	554	102.5	9.1
Slovenia	205	199	230	224	113.1	-2.5
The fYR of Macedonia	3	2	3	3	1.4	0.0
Turkey	510	513	529	455	6.7	-14.0
Yugoslavia	21	32	35	36	3.4	2.3
OTHER EUROPE	2 709	2 929	3 215	3 216	16.4	0.0
Belarus	71	86	88	82	8.1	-6.2
Republic of Moldova	...	-1	-1	-1	-0.1	...
Russian Federation	1 718	2 282	2 617	2 662	18.4	1.7
Canada	4 079	3 992	3 949	3 406	109.8	-13.8
United States	49 952	49 500	49 279	46 368	162.2	-5.9
NORTH AMERICA	54 031	53 492	53 229	49 774	157.0	-6.5

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 8

Paper and paperboard apparent consumption

(1,000 m.t.)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	1 985	2 136	2 395	2 379	294.6	-0.7
Belgium & Luxembourg	2 940	...	...	...	...	...
Belgium	...	2 728	2 644	2 589	252.4	-2.1
Luxembourg	...	63	28	28	62.9	0.0
Denmark	1 311	1 328	1 175	1 641	307.7	39.7
Finland	2 027	2 043	2 223	1 949	376.4	-12.3
France	10 743	10 955	11 394	10 926	183.8	-4.1
Germany	17 073	17 766	19 087	18 543	226.1	-2.9
Greece	1 078	1 084	879	879	82.7	0.0
Iceland	32	6	24	24	85.2	-1.7
Ireland	446	429	420	420	109.3	0.0
Italy	9 592	10 461	10 201	9 882	171.8	-3.1
Liechtenstein	...	...	...	...	...	...
Netherlands	3 894	4 164	3 911	3 911	245.5	0.0
Norway	736	731	785	613	136.6	-21.9
Portugal	1 057	1 053	1 189	1 251	124.7	5.2
Spain	5 462	8 047	6 676	6 676	167.2	0.0
Sweden	1 888	1 867	2 509	2 419	273.9	-3.6
Switzerland	1 590	1 467	1 576	1 566	218.5	-0.6
United Kingdom	11 413	11 871	11 495	11 862	199.2	3.2
EU/EFTA	73 267	78 199	78 611	77 559	199.4	-1.3
Albania	50	8	10	10	3.1	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	201	196	211	239	30.4	13.3
Croatia	478	488	488	488	104.9	0.0
Cyprus	51	34	54	55	70.0	3.2
Czech Republic	782	803	849	929	90.5	9.4
Estonia	49	52	66	74	53.9	12.4
Hungary	659	659	779	779	78.5	0.0
Israel	609	637	713	713	115.5	0.0
Latvia	85	43	92	101	41.9	9.5
Lithuania	89	83	94	105	28.6	12.3
Malta	34	27	27	27	69.1	0.0
Poland	2 088	2 268	2 409	2 396	62.1	-0.5
Romania	346	319	372	396	17.7	6.5
Slovakia	489	703	823	886	164.0	7.7
Slovenia	309	212	170	180	90.4	5.3
The fYR of Macedonia	41	45	47	44	21.3	-7.3
Turkey	2 075	2 142	2 756	2 016	29.8	-26.9
Yugoslavia	161	242	253	346	32.8	36.5
OTHER EUROPE	8 595	8 962	10 212	9 783	49.1	-4.2
Belarus	227	259	308	310	30.6	0.6
Republic of Moldova	...	15	15	15	3.6	0.0
Russian Federation	2 128	2 848	3 415	3 925	27.1	15.0
Canada	6 871	8 370	9 118	9 132	294.4	0.2
United States	91 866	95 870	93 685	88 708	310.2	-5.3
NORTH AMERICA	98 738	104 240	102 803	97 840	308.7	-4.8

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 9

Graphic papers apparent consumption
(1,000 m.t.)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	767	857	922	1 025	127.0	11.2
Belgium & Luxembourg	1 386	...	...	...	...	...
Belgium	...	1 408	1 382	1 367	133.3	-1.1
Luxembourg	...	56	46	46	103.7	0.0
Denmark	686	662	696	1 107	207.6	59.1
Finland	1 259	1 276	1 406	1 352	261.1	-3.8
France	5 211	5 413	5 595	5 314	89.4	-5.0
Germany	8 721	8 945	9 674	9 220	112.4	-4.7
Greece	295	368	382	382	36.0	0.0
Iceland	15	6	6	6	22.4	0.0
Ireland	201	215	167	167	43.5	0.0
Italy	3 539	4 029	4 201	4 022	69.9	-4.3
Liechtenstein	...	...	...	...	...	...
Netherlands	1 858	1 742	1 965	1 965	123.4	0.0
Norway	462	454	544	377	84.0	-30.7
Portugal	449	466	550	681	67.9	23.8
Spain	2 299	2 339	2 461	2 461	61.7	0.0
Sweden	694	790	1 141	1 020	115.5	-10.6
Switzerland	931	927	991	914	127.5	-7.7
United Kingdom	6 497	6 788	6 472	7 196	120.9	11.2
EU/EFTA	35 271	36 741	38 602	38 624	99.3	0.1
Albania	14	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	40	62	77	83	10.6	7.8
Croatia	61	69	69	69	14.8	0.0
Cyprus	23	5	23	26	32.6	11.1
Czech Republic	348	341	350	399	38.9	14.0
Estonia	25	29	36	33	23.9	-7.6
Hungary	337	328	406	406	40.9	0.0
Israel	261	259	324	324	52.5	0.0
Latvia	44	15	43	43	17.8	-1.2
Lithuania	37	40	42	44	11.9	4.3
Malta	13	4	4	4	10.7	0.0
Poland	929	1 047	1 014	994	25.8	-2.0
Romania	128	87	149	153	6.8	2.6
Slovakia	240	551	592	626	115.9	5.7
Slovenia	125	89	66	56	28.4	-14.1
The fYR of Macedonia	17	16	17	15	7.2	-12.6
Turkey	732	806	1 207	643	9.5	-46.7
Yugoslavia	...	...	48	61	5.8	25.7
OTHER EUROPE	3 375	3 748	4 467	3 978	20.3	-11.0
Belarus	...	41	75	96	9.5	28.1
Republic of Moldova	...	3	3	3	0.6	0.0
Russian Federation	651	910	1 102	1 175	8.1	6.6
Canada	3 099	4 321	3 924	3 915	126.2	-0.2
United States	38 876	40 080	40 374	37 094	129.7	-8.1
NORTH AMERICA	41 975	44 401	44 298	41 009	129.4	-7.4

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 10

Sanitary and household papers apparent consumption
(1,000 m.t.)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	113	109	114	114	14.1	0.1
Belgium & Luxembourg	96	...	...	...	...	...
Belgium	...	100	98	99	9.7	0.6
Luxembourg	...	-19	-18	-18	-40.9	...
Denmark	2	3	3	3	0.6	0.0
Finland	109	124	124	118	22.8	-4.6
France	533	593	632	656	11.0	3.8
Germany	936	979	1 050	971	11.8	-7.5
Greece	126	126	69	69	6.5	0.0
Iceland	...	...	...	...	...	...
Ireland	4	-2	-4	-4	-1.0	...
Italy	813	1 103	1 093	1 105	19.2	1.2
Liechtenstein	...	...	...	...	...	...
Netherlands	175	185	145	145	9.1	0.0
Norway	14	13	15	16	3.6	6.7
Portugal	64	64	66	67	6.6	0.8
Spain	416	435	451	451	11.3	0.0
Sweden	236	208	224	211	23.9	-5.6
Switzerland	108	82	208	205	28.5	-1.9
United Kingdom	835	863	831	857	14.4	3.1
EU/EFTA	4 580	4 966	5 100	5 063	13.2	-0.7
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	...	21	9	11	1.4	22.2
Croatia	211	207	207	207	44.6	0.0
Cyprus	...	...	7	8	9.8	4.2
Czech Republic	32	37	43	47	4.6	9.3
Estonia	0	0	0	1	0.4	81.3
Hungary	47	48	48	48	4.8	0.0
Israel	...	48	45	45	7.2	0.0
Latvia	1	0	0	1	0.2	36.4
Lithuania	11	8	8	9	2.3	10.8
Malta	...	...	...	...	...	...
Poland	113	120	114	122	3.1	6.5
Romania	39	35	37	41	1.8	10.5
Slovakia	73	47	73	95	17.6	30.1
Slovenia	50	56	59	58	29.4	-0.7
The fYR of Macedonia	...	3	3	3	1.4	-11.3
Turkey	73	84	97	85	1.3	-12.4
Yugoslavia	...	...	9	13	1.2	37.6
OTHER EUROPE	649	712	760	792	4.0	4.2
Belarus	...	4	1	2	0.2	28.6
Republic of Moldova	...	...	...	...	...	...
Russian Federation	101	107	107	126	0.9	17.8
Canada	547	574	605	646	20.8	6.8
United States	6 044	6 330	6 301	6 405	22.4	1.7
NORTH AMERICA	6 591	6 904	6 905	7 051	22.2	2.1

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 11

Packaging materials apparent consumption
(1,000 m.t.)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	991	1 052	1 227	1 099	136.1	-10.4
Belgium & Luxembourg	1 277	...	...	...	...	...
Belgium	...	1 115	1 056	1 022	99.6	-3.2
Luxembourg	...	18	11	11	25.4	0.0
Denmark	549	575	407	439	82.3	7.9
Finland	567	514	558	350	67.6	-37.2
France	4 828	4 778	5 023	4 824	81.1	-4.0
Germany	6 341	6 722	7 173	7 209	87.9	0.5
Greece	610	581	418	418	39.4	0.0
Iceland	...	...	...	...	...	...
Ireland	217	192	232	232	60.4	0.0
Italy	4 865	3 980	4 312	4 229	73.5	-1.9
Liechtenstein	...	...	...	...	...	...
Netherlands	1 808	2 211	1 824	1 824	114.5	0.0
Norway	286	289	256	185	41.2	-27.7
Portugal	515	486	536	466	46.4	-13.1
Spain	2 348	4 833	3 307	3 307	82.8	0.0
Sweden	830	752	1 056	1 103	124.9	4.4
Switzerland	516	353	384	444	61.9	15.6
United Kingdom	3 672	3 582	3 476	3 279	55.1	-5.7
EU/EFTA	30 220	32 033	31 257	30 441	78.3	-2.6
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	...	99	110	124	15.8	12.7
Croatia	135	138	138	138	29.6	0.0
Cyprus	22	23	21	21	26.0	-3.7
Czech Republic	378	405	418	440	42.9	5.4
Estonia	22	18	28	39	28.2	40.8
Hungary	250	257	293	293	29.5	0.0
Israel	270	304	317	317	51.4	0.0
Latvia	30	26	44	51	21.1	15.8
Lithuania	41	33	41	50	13.5	23.0
Malta	...	...	...	...	...	...
Poland	891	874	1 049	1 051	27.2	0.2
Romania	171	171	174	182	8.1	4.9
Slovakia	127	-12	35	50	9.3	42.9
Slovenia	122	51	33	52	26.3	56.1
The fYR of Macedonia	21	29	25	24	11.9	-4.4
Turkey	1 211	1 196	1 390	1 235	18.3	-11.2
Yugoslavia	...	...	173	231	21.9	33.6
OTHER EUROPE	3 690	3 614	4 289	4 299	22.0	0.2
Belarus	...	125	130	98	9.6	-24.8
Republic of Moldova	...	6	6	6	1.3	0.0
Russian Federation	964	1 294	1 779	2 229	15.4	25.3
Canada	3 284	3 457	3 661	4 548	146.6	24.2
United States	44 467	46 877	44 455	42 907	150.1	-3.5
NORTH AMERICA	47 751	50 334	48 116	47 455	149.7	-1.4

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 12

Other paper and paperboard apparent consumption
(1,000 m.t.)

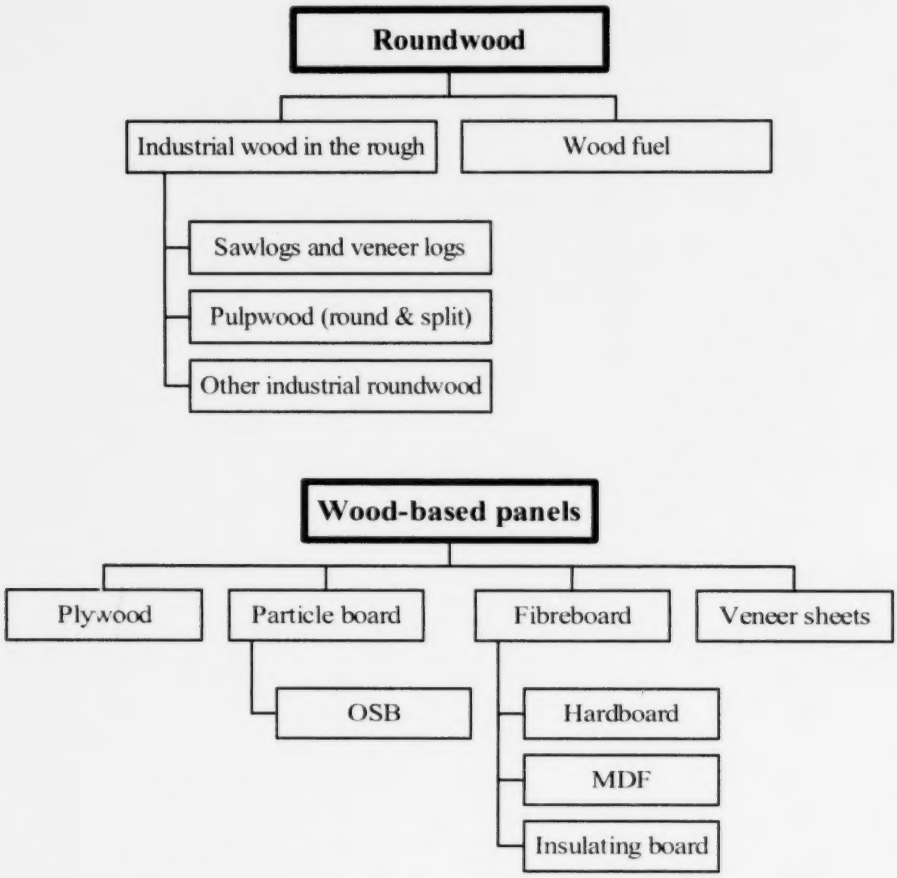
	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	115	118	132	141	17.4	6.4
Belgium & Luxembourg	181	...	...	...	...	...
Belgium	...	105	107	102	9.9	-5.0
Luxembourg	...	8	-11	-11	-25.3	...
Denmark	74	88	69	92	17.3	33.3
Finland	92	129	136	129	25.0	-5.0
France	171	171	143	132	2.2	-7.8
Germany	1 075	1 120	1 190	1 143	13.9	-3.9
Greece	46	9	9	9	0.9	0.0
Iceland	...	...	...	...	...	...
Ireland	24	24	25	25	6.5	0.0
Italy	376	1 349	595	525	9.1	-11.7
Liechtenstein	...	...	...	...	...	...
Netherlands	52	26	-23	-23	-1.4	...
Norway	-26	-25	-30	35	7.8	...
Portugal	30	37	37	37	3.7	0.4
Spain	398	440	458	458	11.5	0.0
Sweden	128	117	88	85	9.6	-3.3
Switzerland	35	105	-7	3	0.5	...
United Kingdom	409	638	715	530	8.9	-25.9
EU/EFTA	3 179	4 459	3 634	3 412	9.2	-6.1
Albania	36	7	7	7	2.2	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	...	14	15	21	2.7	40.0
Croatia	71	74	74	74	15.9	0.0
Cyprus	...	...	2	1	1.6	-23.8
Czech Republic	24	20	38	42	4.1	11.6
Estonia	2	5	3	2	1.4	-24.8
Hungary	26	26	32	32	3.2	0.0
Israel	...	...	...	...	...	...
Latvia	10	2	4	7	2.7	49.1
Lithuania	0	3	3	3	0.7	-12.5
Malta	...	...	...	...	...	...
Poland	156	227	232	230	6.0	-0.9
Romania	7	27	12	20	0.9	67.8
Slovakia	49	117	123	115	21.3	-6.5
Slovenia	12	16	13	13	6.3	-0.7
The fYR of Macedonia	0	-3	1	2	0.8	15.6
Turkey	59	56	62	53	0.8	-14.5
Yugoslavia	58	85	23	41	3.9	81.0
OTHER EUROPE	509	676	643	662	3.4	2.9
Belarus	...	89	102	115	11.3	12.5
Republic of Moldova	...	7	7	7	1.6	0.0
Russian Federation	412	537	426	395	2.7	-7.3
Canada	-58	18	928	23	0.7	-97.5
United States	2 479	2 583	2 556	2 302	8.1	-9.9
NORTH AMERICA	2 421	2 601	3 484	2 325	7.3	-33.3

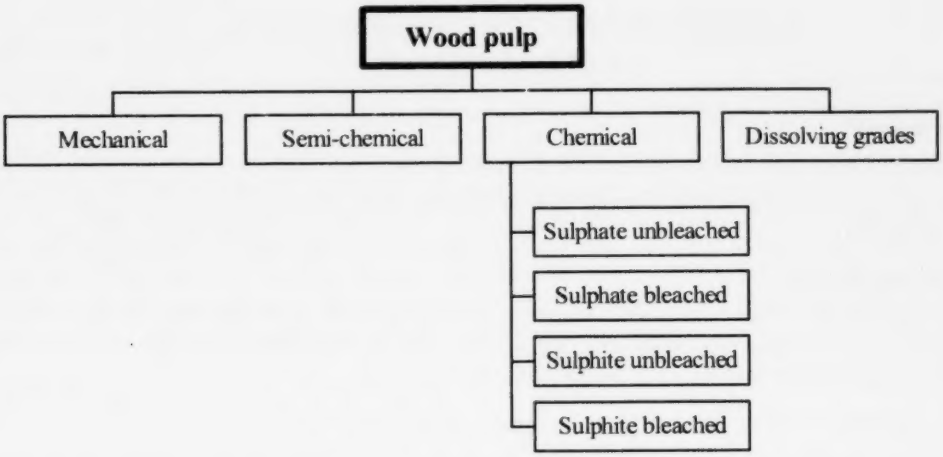
Source: UNECE/FAO TIMBER database, 2002.

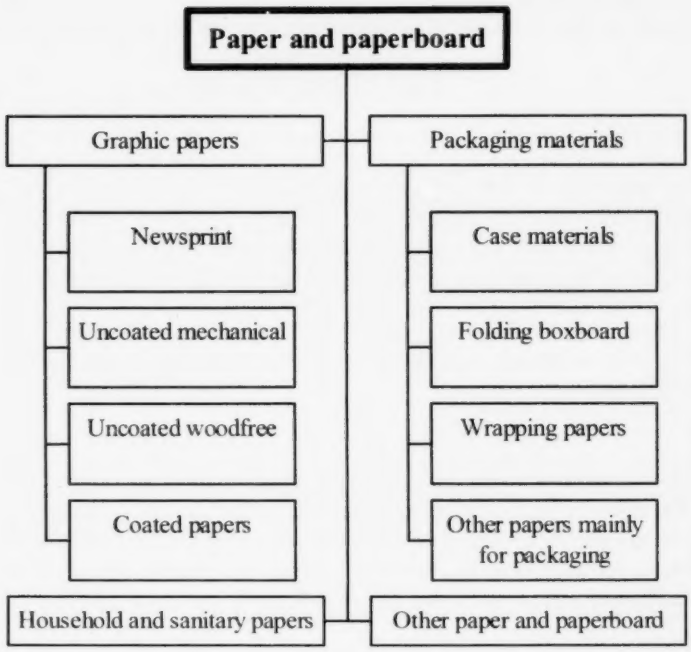
Components of wood products groups

(Based on Joint Forest Sector Questionnaire nomenclature. 2001)

The important breakdowns of the major groups of primary forest products are diagrammed below. In addition, many sub-items are further divided into softwood or hardwood. These are all the roundwood products, sawnwood, veneer sheets and plywood. Items that do not fit into listed aggregates are not shown. These are wood charcoal, chips and particles, wood residues, sawnwood, other pulp and recovered paper.




Wood pulp
Mechanical
Semi-chemical
Chemical
Dissolving grades
Sulphate unbleached
Sulphate bleached
Sulphite unbleached
Sulphite bleached


Paper and paperboard
Graphic papers
Packaging materials
Newsprint
Uncoated mechanical
Uncoated woodfree
Coated papers
Case materials
Folding boxboard
Wrapping papers
Other papers mainly for packaging
Household and sanitary papers
Other paper and paperboard

FOREST PRODUCTS TERMINOLOGY[1]

GENERAL TERMS

Coniferous (softwood)

All woods derived from trees classified botanically as Gymnospermae, e.g. *Abies* spp., *Araucaria* spp., *Cedrus* spp., *Chamaecyparis* spp., *Cupressus* spp., *Larix* spp., *Picea* spp., *Pinus* spp., *Thuja* spp., *Tsuga* spp., etc. These are generally referred to as softwoods.

Non-coniferous (hardwood)

All woods derived from trees classified botanically as Angiospermae, e.g. *Acer* spp., *Dipterocarpus* spp., *Entandrophragma* spp., *Eucalyptus* spp., *Fagus* spp., *Populus* spp., *Quercus* spp., *Shorea* spp., *Swietonia* spp., *Tectona* spp., etc. These are generally referred to as broadleaves or hardwoods.

Tropical

Tropical timber is defined in the International Tropical Timber Agreement (1994) as follows "Non-coniferous tropical wood for industrial uses, which grows or is produced in the countries situated between the Tropic of Cancer and the Tropic of Capricorn. The term covers logs, sawnwood, veneer sheets and plywood. Plywood which includes in some measure conifers of tropical origin shall also be covered by the definition." Tropical sawnwood, veneer sheets and plywood shall also include products produced in non-tropical countries from imported tropical roundwood.

TRANSACTIONS

Removals

The volume of all trees, living or dead, that are felled and removed from the forest, other wooded land or other felling sites. It includes natural losses that are recovered (i.e. harvested), removals during the year of wood felled during an earlier period removals of non-stem wood such as stumps and branches (where these are harvested) and removal of trees killed or damaged by natural causes (i.e. natural losses), e.g. fire, windblown, insects and diseases. It excludes bark and other non-woody biomass and any wood that is not removed, e.g. stumps, branches and tree tops (where these are not harvested) and felling residues (harvesting waste). It is reported in cubic metres solid volume underbark (i.e. excluding bark). Where it is measured overbark (i.e. including bark), the volume has to be adjusted downwards to convert to an underbark estimate.

Production

The solid volume or weight of all production of the products specified below. It includes the production of products that may immediately be consumed in the production of another product (e.g. wood pulp, which may immediately be converted into paper as part of a continuous process). It excludes the production of veneer sheets that are used for plywood production within the same country. It is reported in cubic metres of solid volume in the case of roundwood, sawnwood and wood based panels and metric tonnes in the case of charcoal, pulp and paper products.

Imports (volume, value)

Products imported for domestic consumption or processing shipped into a country. It includes imports for re-export. It excludes "In-transit" shipments. It is reported in cubic metres of solid volume or metric tonnes and values normally include cost, insurance and freight (i.e. CIF).

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[1] From ECE/FAO/EUROSTAT/ITTO Joint Forest Sector Questionnaire and APA-The Engineered Wood Association.

Exports (volume, value)

Products of domestic origin or manufacture shipped out of the country. It includes re-exports. It excludes "in-transit" shipments. It is reported in cubic metres of solid volume or metric tonnes and values are normally recorded as free-on-board (i.e. FOB).

PRODUCTS

The names of individual forest products and product aggregates are listed below in the order in which they occur in the publication *Forest Products Statistics*. Separate definitions are not provided for coniferous and non-coniferous components where the general definition given above applies. Unless indicated otherwise, each forest product category includes both coniferous and non-coniferous components.

Roundwood

All roundwood felled or otherwise harvested and removed. It comprises all wood obtained from removals, i.e. the quantities removed from forests and from trees outside the forest, including wood recovered from natural, felling and logging losses during the period, calendar year or forest year. It includes all wood removed with or without bark, including wood removed in its round form, or split, roughly squared or in other form (e.g. branches, roots, stumps and burls [where these are harvested]) and wood that is roughly shaped or pointed. It is an aggregate comprising wood fuel, including wood for charcoal and industrial roundwood (wood in the rough). It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Wood fuel (including wood for charcoal)

Roundwood that will be used as fuel for purposes such as cooking, heating or power production. It includes wood harvested from main stems, branches and other parts of trees (where these are harvested for fuel) and wood that will be used for charcoal production (e.g. in pit kilns and portable ovens). The volume of roundwood used in charcoal production is estimated by using a factor of 6.0 to convert from the weight (m.t.) of charcoal produced to the solid volume (m^3) of roundwood used in production. It also includes wood chips to be used for fuel that are made directly (i.e. in the forest) from roundwood. It excludes wood charcoal. It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Industrial roundwood (wood in the rough)

All roundwood except wood fuel. It is an aggregate comprising sawlogs and veneer logs; pulpwood, round and split; and other industrial roundwood. It is reported in cubic metres solid volume underbark (i.e. excluding bark). The customs classification systems used by most countries do not allow the division of industrial roundwood *trade* statistics into the different end-use categories that have long been recognized in *production* statistics (i.e. saw and veneer logs, pulpwood and other industrial roundwood. It excludes telephone poles.

Sawlogs and veneer logs

Roundwood that will be sawn (or chipped) lengthways for the manufacture of sawnwood or railway sleepers (ties) or used for the production of veneer (mainly by peeling or slicing). It includes roundwood (whether or not it is roughly squared) that will be used for these purposes: shingle bolts and stave bolts; match billets and other special types of roundwood (e.g. burls and roots, etc.) used for veneer production. It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Pulpwood, round and split

Roundwood that will be used for the production of pulp, particleboard or fibreboard. It includes: roundwood (with or without bark) that will be used for these purposes in its round form or as splitwood or wood chips made directly (i.e. in the forest) from roundwood. It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Other industrial roundwood

Industrial roundwood (wood in the rough) other than sawlogs, veneer logs or pulpwood. It includes roundwood that will be used for poles, piling, posts, fencing, pitprops tanning, distillation and match blocks, etc. It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Wood charcoal

Wood carbonised by partial combustion or the application of heat from external sources. It includes charcoal used as a fuel or for other uses, e.g. as a reduction agent in metallurgy or as an absorption or filtration medium. It is reported in metric tonnes.

Chips and particles

Wood that has been deliberately reduced to small pieces during the manufacture of other wood products and is suitable for pulping, for particle board and fibreboard production, for use as a fuel, or for other purposes. It excludes wood chips made directly (i.e. in the forest) from roundwood (i.e. already counted as pulpwood, round and split). It is reported in cubic metres solid volume excluding bark.

Wood residues

The volume of roundwood that is left over after the production of forest products in the forest processing industry (i.e. forest processing residues) and that has not been reduced to chips or particles. It includes sawmill rejects, slabs, edgings and trimmings, veneer log cores, veneer rejects, sawdust, residues from carpentry and joinery production, etc. It excludes wood chips made either directly (i.e. in the forest) from roundwood or made from residues (i.e. already counted as pulpwood, round and split or wood chips and particles). It is reported in cubic metres solid volume excluding bark.

Sawnwood

Wood that has been produced from both domestic and imported roundwood, either by sawing lengthways or by a profile-chipping process and that, with a few exceptions, exceeds 5 mm in thickness. It includes planks, beams, joists, boards, rafters, scantlings, laths, boxboards and "lumber", etc., in the following forms: unplaned, planed, finger-jointed, etc. It excludes sleepers, wooden flooring, mouldings (sawnwood continuously shaped along any of its edges or faces, like tongued, grooved, rebated, V-jointed, beaded, moulded, rounded or the like) and sawnwood produced by resawing previously sawn pieces. It is reported in cubic metres solid volume.

Wood-based panels

This product category is an aggregate comprising veneer sheets, plywood, particle board, and fibreboard. It is reported in cubic metres solid volume.

Veneer sheets

Thin sheets of wood of uniform thickness, rotary cut (i.e. peeled), sliced or sawn. It includes wood used for the manufacture of laminated construction material, furniture, veneer containers, etc. It excludes wood used for plywood production within the same country. It is reported in cubic metres solid volume.

Plywood

A panel consisting of an assembly of veneer sheets bonded together with the direction of the grain in alternate plies generally at right angles. The veneer sheets are usually placed symmetrically on both sides of a central ply or core that may itself be made from a veneer sheet or another material. It includes *veneer plywood* (plywood manufactured by bonding together more than two veneer sheets, where the grain of alternate veneer sheets is crossed, generally at right angles); *core plywood* or *blockboard* (plywood with a solid core (i.e. the central layer, generally thicker than the other plies) that consists of narrow boards, blocks or strips of wood placed side by side, which may or may not be glued together); *cellular board* (plywood with a core of cellular construction); and *composite plywood* (plywood with the core or certain layers made of material other than solid wood or veneers). It excludes laminated construction materials (e.g. glulam), where the grain of the veneer sheets generally runs in the same direction. It is reported in cubic metres solid volume. Non-coniferous (tropical) plywood is defined as having at least one face sheet of non-coniferous (tropical) wood.

Particle board (including oriented strandboard [OSB])

A panel manufactured from small pieces of wood or other ligno-cellulosic materials (e.g. chips, flakes, splinters, strands, shreds, shives, etc.) bonded together by the use of an organic binder together with one or more of the following agents: heat, pressure, humidity, a catalyst, etc. The particle board category is an aggregate category. It

includes particle board, oriented strandboard (OSB) and flaxboard. It excludes wood wool and other particle boards bonded together with inorganic binders. It is reported in cubic metres solid volume.

Oriented strandboard (OSB)

A structural board in which layers of narrow wafers are layered alternately at right angles in order to give the board greater elastomechanical properties. The wafers, which resemble small pieces of veneer, are coated with e.g. waterproof phenolic resin glue, interleaved together in mats and then bonded together under heat and pressure. The resulting product is a solid, uniform building panel having high strength and water resistance. It includes waferboard and oriented strandboard (OSB). It is reported in cubic metres solid volume.

Fibreboard

A panel manufactured from fibres of wood or other ligno-cellulosic materials with the primary bond deriving from the felting of the fibres and their inherent adhesive properties (although bonding materials and/or additives may be added in the manufacturing process). It includes fibreboard panels that are flat-pressed and moulded fibreboard products. It is an aggregate comprising hardboard, medium density fibreboard (MDF), and insulating board. It is reported in cubic metres solid volume.

Hardboard

Fibreboard of a density exceeding 0.8 g/cm^3. It excludes similar products made from pieces of wood, wood flour or other ligno-cellulosic material where additional binders are required to make the panel, and panels made of gypsum or other mineral material. It is reported in cubic metres solid volume.

Medium density fibreboard (MDF)

Fibreboard of a density exceeding 0.5 g/cm^3 but not exceeding 0.8 g/cm^3. It is reported in cubic metres solid volume.

Insulating board

Fibreboard of a density not exceeding 0.5 g/cm^3. It is reported in cubic metres solid volume.

Wood pulp

Fibrous material prepared from pulpwood, wood chips, particles or residues by mechanical and/or chemical process for further manufacture into paper, paperboard, fibreboard or other cellulose products. It is an aggregate comprising mechanical wood pulp; semi-chemical wood pulp; chemical wood pulp; and dissolving wood pulp. It is reported in metric tonnes air-dry weight (i.e. with a 10% moisture content).

Mechanical wood pulp

Wood pulp obtained by grinding or milling pulpwood or residues into fibres, or through refining chips or particles. Also called groundwood pulp and refiner pulp, it may be bleached or unbleached. It includes chemi-mechanical and thermo-mechanical pulp. It excludes exploded and defibrillated pulp. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Semi-chemical wood pulp

Wood pulp obtained by subjecting pulpwood, wood chips, particles or residues to a series of mechanical and chemical treatments, none of which alone is sufficient to make the fibres separate readily. It may be bleached or unbleached. It includes semi-chemical wood pulp; chemi-groundwood pulp; and chemi-mechanical wood pulp etc. (named in the order and importance of the treatment during the manufacturing process). It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Chemical wood pulp

Wood pulp obtained by subjecting pulpwood, wood chips, particles or residues to a series of chemical treatments. It includes sulphate (kraft) wood pulp; soda wood pulp and sulphite wood pulp. It may be bleached, semi-bleached or unbleached. It excludes dissolving grades of wood pulp. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content). Component pulps are unbleached sulphite pulp, bleached sulphite pulp, unbleached sulphate pulp, and bleached sulphate pulp.

Sulphite unbleached pulp

Sulphite bleached pulp

Wood pulp obtained by mechanically reducing pulpwood, wood chips, particles or residues to small pieces that are subsequently cooked in a pressure vessel in the presence of a bisulphite cooking liquor. Bisulphites such as ammonium, calcium, magnesium and sodium are commonly used in this process. It excludes dissolving grades of wood pulp. It is reported in metric tonnes air-dry weight (i.e. with a 10% moisture content).

Dissolving grades

Chemical pulp (sulphate, soda or sulphite) made from wood of special quality, with a very high alpha-cellulose content (usually 90 percent and over). This type of pulp is always bleached and is readily adaptable for uses other than papermaking. It is used principally as a source of cellulose in the manufacture of products such as synthetic fibres, cellulose plastic materials, lacquers and explosives. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Other pulps

Pulp manufactured from waste paper or from fibrous vegetable materials other than wood and used for the manufacture of paper, paperboard and fibreboard. It is an aggregate comprising pulp from fibres other than wood and recovered fibre pulp. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Pulp from fibres other than wood

Pulp manufactured from fibrous vegetable materials other than wood and used for the manufacture of paper, paperboard and fibreboard. It excludes pulp made from recovered paper. It includes pulps made from straw, bamboo, bagasse, esparto, other reeds or grasses, cotton fibres, flax, hemp, rags, and other textile wastes. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Recovered fibre pulp

Pulp manufactured from recovered paper or paperboard and used for the manufacture of paper, paperboard and fibreboard. It excludes pulp made from straw, bamboo, bagasse, esparto, other reeds or grasses, cotton fibres, flax, hemp, rags, and other textile wastes. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Recovered paper

Waste and scraps of paper or paperboard that have been collected for re-use as a raw material for the manufacture of paper and paperboard. It includes paper and paperboard that has been used for its original purpose and residues from paper and paperboard production. It is reported in metric tonnes.

Paper and paperboard

The paper and paperboard category is an aggregate category. It represents the sum of graphic papers, sanitary and household papers, packaging materials and other paper and paperboard. Products in this category are generally manufactured in strips or rolls of a width exceeding 15 cm (36 cm for HS 48.13 and 48.19) or in rectangular sheets with one side exceeding 36 cm and the other exceeding 15 cm in the unfolded state. It excludes manufactured paper products such as boxes, cartons, books and magazines, etc. It is reported in metric tonnes.

Graphic papers

The graphic papers category is an aggregate category. It represents the sum of: newsprint, uncoated mechanical, uncoated woodfree and coated papers. Products in this category are generally manufactured in strips or rolls of a width exceeding 15 cm (36 cm for HS 48.13 and 48.19) or in rectangular sheets with one side exceeding 36 cm and the other exceeding 15 cm in the unfolded state. It excludes manufactured paper products such as books and magazines, etc. It is reported in metric tonnes.

Newsprint

Paper mainly used for printing newspapers. It is made largely from mechanical pulp and/or waste paper, with or without a small amount of filler. Weights usually range from 40 to 52 g/m^2 but can be as high as 65 g/m^2. Newsprint is machine finished or slightly calendered, white or slightly coloured and is used in reels for letterpress, offset or flexo printing. It is reported in metric tonnes.

Uncoated mechanical

Paper suitable for printing or other graphic purposes where less than 90% of the fibre furnish consists of chemical pulp fibres. This grade is also known as groundwood or wood-containing paper and magazine paper, such as heavily filled supercalendered paper for consumer magazines printed by the rotogravure and offset methods. It excludes wallpaper base. It is reported in metric tonnes.

Uncoated woodfree

Paper suitable for printing or other graphic purposes, where at least 90% of the fibre furnish consists of chemical pulp fibres. Uncoated woodfree paper can be made from a variety or furnishes, with variable levels of mineral filler and a range of finishing processes such as sizing, calendering, machine glazing and watermarking. This grade includes most office papers, such as business forms, copier, computer, stationery and book papers. Pigmented and size press "coated" papers (coating less than 5 g per side) are covered by this heading. It excludes wallpaper base. It is reported in metric tonnes.

Coated papers

All paper suitable for printing or other graphic purposes and coated on one or both sides with carbon or minerals such as china clay (kaolin), calcium carbonate, etc. Coating may be by a variety of methods, both on-machine and off-machine, and may be supplemented by supercalendering. It includes raw carbon and self-copy paper in rolls or sheets. It excludes other copying and transfer papers. It is reported in metric tonnes.

Sanitary and household papers

This covers the stock of a wide range of tissue and other hygienic papers for use in households or commercial and industrial premises. Examples are toilet paper and facial tissues, kitchen towels, hand towels and industrial wipes. Some tissue is also used in the manufacture of baby napkins, sanitary towels, etc. The parent reel stock is made from virgin pulp or recovered fibre or mixtures of these. Final products cut to size or in rolls not exceeding 36 cm are excluded here. It is reported in metric tonnes.

Packaging materials

Paper or paperboard mainly used for wrapping and packaging purposes. It excludes: Unbleached kraft paper and paperboard that are not sack kraft paper or kraftliner and weighing more than 150 g/m^2 but less than 225 g/m^2, felt paper and paperboard, tracing papers, not further processed uncoated paper weighing 225 g/m^2 or more. It is reported in metric tonnes.

Case materials

Papers and boards mainly used in the manufacture of corrugated board. They are made from any combination of virgin and recovered fibres and can be bleached, unbleached or mottled. It includes kraftliner, testliner, semi-chemical fluting, and waste-based fluting (Wellenstoff). It is reported in metric tonnes.

Folding boxboard

Often referred to as cartonboard, it may be single- or multi-ply, coated or uncoated. It is made from virgin and/or recovered fibres, and has good folding properties, stiffness and scoring ability. It is mainly used in cartons for consumer products such as frozen food and for liquid containers. It includes paper and paperboard covered or coated with plastics (excluding adhesives); coated Multi-ply not uniformly bleached throughout the mass. It is reported in metric tonnes.

Wrapping papers

Wrappings (up to 150 g/m^2): Papers whose main use is wrapping or packaging made from any combination of virgin or recovered fibres, bleached or unbleached. They may be subject to various finishing and/or marking processes. It includes: sack kraft, other wrapping krafts, sulphite and greaseproof papers as well as coated paper and paperboard not uniformly bleached throughout the mass, except multi-ply. It excludes tracing papers. It is reported in metric tonnes.

Other papers mainly for packaging

This category embraces all papers and boards mainly for packaging purposes other than those listed above. Most are produced from recovered fibres, e.g. greyboards, and go for conversion, which in some cases may be for end-uses other than packaging. It includes composite, not coated, paper and paper board of flat layers stuck together. It is reported in metric tonnes.

Other paper and paperboard N.E.S. (Not Elsewhere Specified)

Other papers and boards for industrial and special purposes. This category includes cigarette papers and stock of filter papers, as well as gypsum liners and special papers for waxing, insulating, roofing, asphalting, and other specific applications or treatments. It excludes all composite, not coated, paper and paper board of flat layers stuck together; coated paper and paperboard not uniformly bleached throughout the mass; paper and paperboard covered or coated with plastics (excluding adhesives). It includes wallpaper base; unbleached kraft paper and paperboard that are not sack kraft paper or kraftliner and weighing more than 150 g/m^2 but less than 225 g/m^2; felt paper and paperboard; tracing papers; not further processed uncoated paper weighing 225 g/m^2 or more, raw copying and transfer papers, in rolls or sheets except carbon or self-copy paper. It is reported in metric tonnes.

SECONDARY PROCESSED WOOD AND PAPER PRODUCTS

Further processed sawnwood

Wood sawn or chipped lengthwise (including strips and friezes for parquet flooring, not assembled) and continuously shaped (tongued, grooved, rebated, V-jointed, beaded, moulded, rounded or the like) along any of its edges or faces, whether or not planed, sanded or finger jointed. It excludes: sawn or chipped wood with further treatment of edges and/or faces other than planing, or sanding.

Wooden wrapping and packaging material

Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards, of wood; pallet collars of wood. Casks, barrels, vats, tubs and other coopers' products and parts thereof, of wood, including staves.

Builder's joinery and carpentry of wood

Including windows and doors and coverings thereof as well as cellular wood panels, assembled parquet panels, shingles and shakes.

Wooden furniture

Seats with wooden frames such as wooden camping and garden seats etc., and parts thereof., except: seats convertible into beds, swivel seats, medical seats. Wooden furniture other than seats as of a kind used in offices, in the kitchen, bedrooms and elsewhere, as well as parts of all these.

Prefabricated buildings preponderantly made of wood

E.g.: Log cabins, houses prefabricated from particle board.

Secondary paper products

It includes all articles of paper ready for use. It excludes paper in rolls and sheets cut in the formats specified in paper and paperboard.

Composite paper and paperboard

Composite paper and paperboard (made by sticking flat layers of paper or paperboard together with an adhesive), not surface-coated or impregnated, whether or not internally reinforced, in rolls or sheets.

Special coated paper and pulp products

Paper, paperboard, cellulose wadding and webs of cellulose fibres, coated, impregnated, covered, surface-coloured, surface-decorated or printed, in rolls or sheets. It excludes composite paper and paperboard (made by sticking flat layers of paper or paperboard together with an adhesive), not surface-coated or impregnated, but possibly laminated internally with bitumen, tar or asphalt, in rolls or sheets.

Carbon paper and copying paper, ready for use

Carbon paper, self-copy paper and other copying or transfer, duplicator stencils and offset plates, of paper, whether or not put up in boxes. It excludes raw carbon, self-copy and other copying or transfer papers in paper in rolls or sheets.

Household and sanitary paper

Products ready for use: toilet paper and similar paper, cellulose wadding or webs of cellulose fibres, of a kind used for household or sanitary purposes, in rolls of a width not exceeding 36 cm, or cut to size or shape. It includes e.g. handkerchiefs, cleansing tissues, towels, tablecloths, serviettes, napkins for babies, tampons, bed sheets and similar household, sanitary or hospital articles, articles of apparel and clothing accessories, of paper pulp, paper, cellulose wadding or webs of cellulose fibres. It excludes sanitary paper produced stock.

Packaging cartons, boxes etc.

Cartons, boxes, cases, bags and other packing containers, of paper, paperboard, cellulose wadding or webs of cellulose fibres; box files, letter trays, and similar articles, of paper or paperboard of a kind used in offices, shops or the like.

Other articles of paper and paperboard, ready for use

Products ready for use: e.g. wallpaper and similar wall coverings; window transparencies of paper; floor coverings on a base of paper or of paperboard, whether or not cut to size; all office material like for correspondence, document storage as well as albums, labels of all kinds, bobbins, spools, cops and similar supports of paper pulp, paper or paperboard (whether or not perforated or hardened); all other paper, paperboard, cellulose wadding and webs of cellulose fibres, cut to size or shape; other articles of paper pulp, paper, paperboard, cellulose wadding or webs of cellulose fibres.

Filter paper and paperboard, ready for use

Printing and writing paper, ready for use

For example: strips or rolls for office machines, continuous forms.

Articles, moulded or pressed from pulp

For example: packagings for eggs.

Printed articles

Printed books

Printed books, brochures, leaflets and similar printed matter, whether or not in single sheets.

Newspapers

Newspapers, journals and periodicals, whether or not illustrated or containing advertising material.

Other printed articles

Children's picture, drawing or colouring books; music, printed or in manuscript, whether or not bound or illustrated; maps and hydrographic or similar charts of all kinds, including atlases, wall maps, topographical plans and globes, printed; plans and drawings for architectural, engineering, industrial, commercial, topographical or similar purposes, being originals drawn by hand; hand-written texts; photographic reproductions on sensitised paper and carbon copies of the foregoing; unused postage, revenue or similar stamps of current or new issue in the country to which they are destined; stamp-impressed paper; banknotes; cheque forms; stock, share or bond certificates and similar documents of title; transfers (decalcomania); printed or illustrated postcards; printed cards bearing personal greetings, messages or announcements, whether or not illustrated, with or without envelopes or trimmings; calendars of any kind, printed, including calendar blocks; other printed matter, including printed pictures and photographs.

ENGINEERED WOOD PRODUCTS

These definitions come from APA-The Engineered Wood Association. APA classifies glued engineered wood products into three general groups: 1. glued laminated timber (glulam), 2. structural composite lumber (SCL) consisting primarily of laminated veneer lumber (LVL), but also parallel strand lumber and oriented strand lumber, and 3. wood I-beams.

Glued laminated timber (glulam)

Glulam is an engineered stress-rated product created by adhesively bonding together individual pieces of lumber having a thickness of 50 mm (2 inches) or less. It's one of the most versatile of the engineered wood products. It can be easily shaped into forms ranging from straight beams to complex curved members and is used for a wide variety of structural applications in both residential and nonresidential construction. Glulam is used typically for headers, girders, purlins, beams, arches, and in exposed applications such as bridges, marinas and transmission structures.

Structural composite lumber

Laminated Veneer Lumber (LVL)

LVL is the most widely used of the structural composite lumber products. It is produced by adhesively bonding thin wood veneers together in a large billet so that the grain of all veneers is parallel to the long direction. The LVL billet is then sawn to desired dimensions depending on the construction application. Some of the many uses are in header and beam applications, hip and valley rafters, as scaffold planking and as flange material for wood I-beams.

Parallel Strand Lumber (PSL)

PSL consists of long veneer strands laid in parallel formation and bonded together with an adhesive to form beams. Like LVL and glulam, this product is used for beam and header applications where high bending strength is needed.

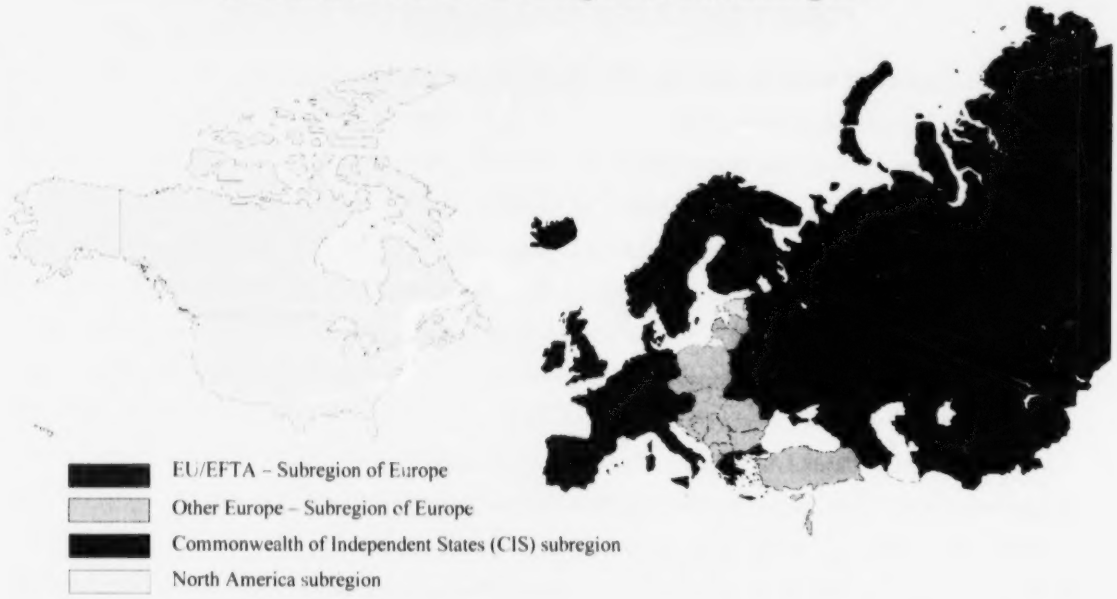
Oriented Strand Lumber (OSL)

Similar to PSL, oriented strand lumber is made from flaked wood strands that have a high length-to-thickness ratio. Combined with an adhesive, the strands are oriented and formed into a large mat or billet and pressed. OSL is used in a variety of applications from studs to millwork components.

Wood I-beams

Wood I-beams are structural, load-carrying products designed mostly for floor joist applications. The beams offer long length and low material weight. Their "I" configuration provides high strength and stiffness. The flange material for I-beams is typically dimension lumber or LVL; the web material is typically oriented strand board (OSB) or plywood. Wood I-beams, used extensively in residential construction, continue to be the fastest growing of the glued engineered wood products.

Countries in the UNECE region and its subregions


EU/EFTA – Subregion of Europe
Other Europe – Subregion of Europe
Commonwealth of Independent States (CIS) subregion
North America subregion

"EU/EFTA" – subregion of Europe

Austria
Belgium
Denmark
Finland
France
Germany
Greece
Iceland
Ireland
Italy
Liechtenstein
Luxembourg
Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom

"Other Europe" – subregion of Europe

Albania
Andorra
Bosnia-Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Estonia
Hungary
Israel
Latvia
Lithuania
Malta
Monaco
Poland
Romania
San Marino
Slovak Republic
Slovenia
The former Yugoslav Republic of Macedonia
Turkey
Yugoslavia

Commonwealth of Independent States (CIS) subregion

Armenia
Azerbaijan
Belarus
Georgia
Kazakhstan
Kyrgyzstan
Republic of Moldova
Russian Federation
Tajikistan
Turkmenistan
Ukraine
Uzbekistan

North America subregion

Canada
United States of America

SOURCES OF INFORMATION USED IN THE *FOREST PRODUCTS ANNUAL MARKET REVIEW*

APA – The Engineered Wood Association, United States, (http://www.apawood.org)

Arborescences, France, (http://www.onf.fr)

Baltic Timber Journal, Latvia, (http://www.btj.lv)

Bureau of Labor Statistics, United States, (http://stats.bls.gov)

Canadian Standards Association, CSA International, (http://www.csa.ca)

Canadian Sustainable Forestry Certification Coalition, (http://www.sfms.com)

Centre d'Etudes de l'Economie du Bois, France, (http://www.able-bois.com)

Chilean Forestry News, (http://www.conaf.cl)

Council of Forest Industries, Canada, (http://www.cofi.org)

Eastern Quotes & Comments, United States, (http://www.rctc.com/irland/)

Engineered Lumber Trends, United States, (http://www.rctc.com/irland/)

European Panel Federation (EPF), (http://www.europanels.org/)

EUROSTAT – European Union Statistical Office, (http://europa.eu.int/comm/eurostat)

Fédération Nationale du Bois, France, (http://www.fnbois.com)

Finnish Forest Research Institute (METLA), (http://www.metla.fi)

Forest Products Conservation & Recycling Review by USDA Forest Service, United States, (http://pc9.fpl.fs.fed.us/documnts/nltrlist.htm)

Forest Products Journal, United States, (http://www.forestprod.org)

Forest Stewardship Council (FSC), (http://www.fscoax.org)

Hardwood Market Report, United States, (http://www.hmr.com)

hardwoodmarkets.com, United Kingdom, (http://www.hardwoodmarkets.com/)

Hardwood Review Export, United States, (http://www.hardwoodreview.com)

Holz Kurier, Austria, (http://www.agrarverlag.at)

Holz-Forschung & Holz-Verweetung, Austria

Holz-Zentralblatt, Germany, (http://www.holz-zentralblatt.com)

Import Export Purchasing News, United States, (http://www.millerpublishing.com/le/news.html)

Instituto Forestal, Chile, (http://www.infor.cl)

International Wood Fiber Report, United States, (http://www.pulp-paper.com)

International Organization for Standardization (ISO), (http://www.iso.ch)

The International Tropical Timber Organisation (ITTO), (http://www.itto.or.jp)

Jaakko Pöyry Consulting, (http://consulting.poyry.com)

Japan Lumber Journal, (http://www.jlj.gr.jp)

Japan Lumber Reports, (http://www.n-mokuzai.com/)

Japan Wood-Products Information and Research Center – JAWIC, (http://www.jawic.or.jp)

La Forêt, Switzerland, (http://www.wvs.ch)

Le Bois National, France, (http://www.boiscope.com/)

Le Commerce International du Bois, France, (http://www.ifrance.com/cib-ltb)

L'Echo des Bois, *Belgium*, (http://www.echodesbois.be)

Lithuanian Centre of Forest Economics Information Bulletin, (MEC Naujienos), (http://www.mec.lt)

Maskayu, Malaysia, (http://www.mtib.gov.my)

Ministry of Forests, British Columbia, Canada, (http://www.gov.bc.ca/for)

Monthly Statistics of Japan, (http://www.stat.go.jp/english/data/geppou/index.htm)

Newsprint Data, Canada, (http://www.cppa.org/)

New Zealand Forest Industries, (http://www.nzforest.co.nz)

Pan European Forest Certification (PEFC), (http://www.pefc.org)

Paperloop.com, United States, (http://www.paperloop.com)

PaperTree Letter, United States, (http://wood-info.com/1879.htm)

Perkasa, Malaysia, (http://www.pusaka.gov.my/)

PIMA - Papermaker Magazine, United States, (http://www.pimaweb.com)

Pulp and Paper Products Council, Canada, (http://www.pppc.org)

Random Lengths Export, United States, (http://www.randomlengths.com)

Random Lengths Yardstick, United States, (http://www.randomlengths.com)

Statistische Bundesamt Preise, Reiche 1; Reiche 2, Germany (http://www.destatis.de)

Swedish National Board for Industrial and Technical Development (NUTEK), (http://www.nutek.se)

Swedish National Energy Administration, (http://www.stem.se)

Swedish Wood Association, (http://www.stef.se)

Swiss Federal Statistical Office, Switzerland (http://www.statistik.admin.ch/)

Timber & Wood Products (TTJ), United Kingdom, (http://www.ttjonline.com/)

UNECE/FAO TIMBER database, (http://www.unece.org/trade/timber)

United States Census Bureau – United States Department of Commerce, (http://www.census.gov)

USDA Foreign Agricultural Service, United States, (http://ffas.usda.gov)

USDA Forest Service, United States, (http://www.fs.fed.us)

Weekly Hardwood Review, United States, (http://www.hardwoodreview.com)

Wood Based Panels, United Kingdom, (http://www.ttjonline.com/)

Wood Markets Monthly, United States, (http://www.woodmarkets.com)

Wood Products Statistical Roundup, American Forest and Paper Association, United States, (http://www.afandpa.org)

World Wide Wood, (http:// http://www.ttjonline.com)

WWF – Forests for Life, (http://www.panda.org/forests4life)

ZMP – Zentrale Markt- und Preisberichtstelle für Erzeugnisse der Land-, Forst- und Ernährungswirtschaft GmbH, Germany, (http://www.zmp.de)

Special chapters in former *Forest Products Annual Market Reviews*

Note to readers: We have found that some chapters of the *Review* have a longer life than the *Annual Market Review*. The following is a listing of all the special chapters, including their most important sections, in order to give an idea of their contents. Back issues are available on the Timber Committee website or through the secretariat.

Timber Bulletin – Volume LIV (2001)

Chapter 3 ***"Romania's Forest Products Markets"***, 12 pages

Secretariat introduction
General economic developments
Forest resources
Institutional framework – forest policy
The effects of the transition process
Forest products industry – production and consumption
Trade of wood and wood products
Integration into the EU
Prospects for wood industry

Chapter 4 ***"Influence on Japanese demand for wood products"***, 10 pages

Introduction
Background
Wood use trends
General trends impacting wood use
Summary
References

Timber Bulletin – Volume LIII (2000)

Chapter 3 ***"Effects of the December 1999 storms on European timber markets"***, 15 pages

Introduction
Damage magnitude: the equivalent of 2 years' harvest in 3 days!
Market effects: potential enormous imbalances mitigated through sector solidarity
Comparisons with 1990 market effects: similar problems and solutions
Assistance by governments: quick and multi-dimensional responsiveness
Positive outcomes?
Conclusion

Chapter 4 ***"Poland's forest products markets"***, 12 pages

Secretariat introduction
General economic developments
Forest resources
Institutional framework for forest and forest industries
Effects of the transition process
Integration into the EU
Forest industry – production and consumption
Trade of wood and wood products
Certified forest products
Prospects for wood industry

Chapter 5 ***"China's forest products markets"***, 19 pages
- Secretariat introduction
- General socio-economic development
- Forest resources
- Institutional framework
- Analysis and development of production of China's major forest products, 1981 to 1999
- Development of China's forest product trade from 1981 to 1999
- China's forests product trade in 1999
- Consumption of major forest products, with international comparisons
- Projections of demand and supply of China's forest products to 2010

Chapter 6 ***"Secondary processed wood products markets"***, 10 pages
- Secretariat introduction
- Introduction
- Secondary processed wood products
- Main flows and trade patterns
- Market profiles
- Conclusion

Chapter 11 ***"Engineered wood products – production, trade, consumption and outlook"***, 16 pages
- Secretariat note
- Introduction
- Current market situation
- Production, consumption and trade statistics
- Outlook for EWPs
- Conclusions

Timber Bulletin – Volume LII (1999)

Chapter 3 ***"Estonia's Forest Products Market"***, 7 pages
- General economic development
- Forest resources
- Institutional framework
- Forest industry
- Trade of wood and wood products

Chapter 4 ***"New Zealand's Forest Products Market"***, 7 pages
- Background to New Zealand's plantation forestry sector
- Market conditions
- Forestry production and trade 1998/1999

Chapter 5 ***"Trade Restrictions and the Future"***, 10 pages
- The question of market access
- Trends in tariffs and non-tariff measures
- Trade impediments
- Implications of further trade liberalization

Chapter 6 ***"Forest Products in the Electronic Market Place"***, 6 pages
- WWW-sites for forest products trade
- North American and European electronic commerce
- The role of the ECE Trade Division in electronic commerce

Chapter 13 ***"Tropical Timber Developments"***, 16 pages, (has since become annual chapter)
Production, exports, imports
Tropical timber consumption and price trends
Strengthening Asian currencies

Timber Bulletin – Volume LI (1998)

Chapter 3 ***"Certified Forest Products Marketplace"***, 11 pages, (has since become annual chapter)
Forest certification schemes
Why certification?
Status of supply and demand
Constraints to market development

Chapter 4 ***"Effects of the Asian Crisis on ECE Region Forest Products Markets"***, 7 pages
Global and specific impacts on the ECE region
Impacts on the radiata pine trade and other forest products
Japan's forest products production and trade
Indonesia's forest products production and trade in 1997 and 1998

Timber Bulletin – Volume XLVII (1994)

Chapter 3 ***"Recycling Wood Fibre and its Effects on the Forest and Forest Industries Sector"***, 7 pages
Situation analysis and legislation
Quantifying the effects
Consequences and solutions

Some facts about the Timber Committee

The Timber Committee is a principal subsidiary body of the UNECE (United Nations Economic Commission for Europe) based in Geneva. It constitutes a forum for cooperation and consultation between member countries on forestry, forest industry and forest product matters. All countries of Europe; the former USSR; United States, of America, Canada and Israel are members of the UNECE and participate in its work.

The UNECE Timber Committee shall, within the context of sustainable development, provide member countries with the information and services needed for policy- and decision-making regarding their forest and forest industry sector ("the sector"), including the trade and use of forest products and, when appropriate, formulate recommendations addressed to member Governments and interested organizations. To this end, it shall:

1. With the active participation of member countries, undertake short-, medium- and long-term analyses of developments in, and having an impact on, the sector, including those offering possibilities for the facilitation of international trade and for enhancing the protection of the environment;
2. In support of these analyses, collect, store and disseminate statistics relating to the sector, and carry out activities to improve their quality and comparability;
3. Provide the framework for cooperation e.g. by organizing seminars, workshops and ad hoc meetings and setting up time-limited ad hoc groups, for the exchange of economic, environmental and technical information between governments and other institutions of member countries that is needed for the development and implementation of policies leading to the sustainable development of the sector and to the protection of the environment in their respective countries;
4. Carry out tasks identified by the UNECE or the Timber Committee as being of priority, including the facilitation of subregional cooperation and activities in support of the economies in transition of central and eastern Europe and of the countries of the region that are developing from an economic point of view;
5. It should also keep under review its structure and priorities and cooperate with other international and intergovernmental organizations active in the sector, and in particular with the FAO (Food and Agriculture Organization of the United Nations) and its European Forestry Commission and with the ILO (International Labour Organisation), in order to ensure complementarity and to avoid duplication, thereby optimizing the use of resources.

More information about the Committee's work may be obtained by writing to:

Timber Section
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UNECE
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CH - 1211 Geneva 10, Switzerland
Fax: + 41 22 917 0041
E-mail: info.timber@unece.org
Website address: http://www.unece.org/trade/timber

UNECE/FAO Publications

Timber Bulletin Volume LV (2002)

ECE/TIM/BULL/2002/...

1. Forest Products Prices, 1998-2000
2. Forest Products Statistics, 1997-2001 (database since 1964 on website)
3. Forest Products Annual Market Review, 2001-2002
4. Forest Fire Statistics, 1999-2001
5. Forest Products Trade Flow Data, 1999-2000
6. Forest Products Markets in 2002 and Prospects for 2003

Geneva Timber and Forest Study Papers

Forest policies and institutions of Europe, 1998-2000	ECE/TIM/SP/19
Forest and Forest Products Country Profile: Russian Federation (Country profiles also exist on Albania, Armenia, Belarus, Bulgaria, former Czech and Slovak Federal Republic, Estonia, Hungary, Lithuania, Poland, Romania, Republic of Moldova, Slovenia and Ukraine)	ECE/TIM/SP/18
Forest resources of Europe, CIS, North America, Australia, Japan and New Zealand	ECE/TIM/SP/17
State of European forests and forestry, 1999	ECE/TIM/SP/16
Non-wood goods and services of the forest	ECE/TIM/SP/15

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Web site: http://www.un.org/Pubs/sales.htm

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Geneva Timber and Forest Discussion Papers *(original language only)*

Forest Certification update for the UNECE region, summer 2002	ECE/TIM/DP/25
Forecasts of Economic Growth in OECD and Central and Eastern European Countries for the period 2000-2040 (EFSOS)	ECE/TIM/DP/24
Forest Certification update for the ECE Region, summer 2001	ECE/TIM/DP/23
Structural, Compositional and Functional Aspects of Forest Biodiversity in Europe	ECE/TIM/DP/22
Markets for secondary processed wood products, 1990-2000	ECE/TIM/DP/21
Forest certification update for the ECE Region, summer 2000	ECE/TIM/DP/20
Trade and environment issues in the forest and forest products sector	ECE/TIM/DP/19
Multiple use forestry	ECE/TIM/DP/18
Forest certification update for the ECE Region, summer 1999	ECE/TIM/DP/17
A summary of "The competitive climate for wood products and paper packaging: the factors causing substitution with emphasis on environmental promotions"	ECE/TIM/DP/16
Recycling, energy and market interactions	ECE/TIM/DP/15
The status of forest certification in the ECE region	ECE/TIM/DP/14
The role of women on forest properties in Haute-Savoie (France): Initial researches	ECE/TIM/DP/13
Interim report on the Implementation of Resolution H3 of the Helsinki Ministerial Conference on the protection of forests in Europe (Results of the second enquiry)	ECE/TIM/DP/12
Manual on acute forest damage	ECE/TIM/DP/7

International Forest Fire News *(two issues per year)*

Timber and Forest Information Series

Timber Committee Yearbook 2002 ECE/TIM/INF/9

The above series of publications may be requested free of charge through:

Timber Section
UNECE Trade Development and Timber Division
United Nations
Palais des Nations
CH - 1211 Geneva 10, Switzerland
Fax: + 41 22 917 0041
E-mail: info.timber@unece.org

Downloads are available at http://www.unece.org/trade/timber

Reader Survey

In an effort to continually improve the UNECE/FAO *Timber Bulletin*, "Forest Products Annual Market Review," readers are encouraged to express their opinions on its content, presentation and distribution. In order to better meet readers' needs, we would like to know more about our readership and their uses of the *Review*. Please fax or e-mail your response to the address below. Thank you.

Your name: _____ Country: _____

Job title: _____

What are your market-related activities? _____

_____

Organisation/Company/Institution/Ministry: _____

What are its market-related activities? _____

_____

Your e-mail address (optional): _____

1. For what purposes do you use this *Review*? (Indicate all which apply.)
   - a. ____ Market sector analyses
   - b. ____ Statistical information
   - c. ____ Statistical analysis
   - d. ____ Policy development
   - e. ____ Information for re-publication
   - f. ____ Preparation for Timber Committee market discussions
   - g. ____ Other: (please specify)

2. Which chapters were useful and interesting for you?
   - a. ____ Overview
   - b. ____ Economic
   - c. ____ Wood promotion
   - d. ____ Turkey's forest products markets
   - e. ____ Chile's forest products
   - f. ____ Wood raw materials
   - g. ____ Sawn softwood
   - h. ____ Sawn hardwood
   - i. ____ Wood-based panels
   - j. ____ Paper, paperboard and woodpulp
   - k. ____ Certified forest products
   - l. ____ Value added forest products
   - m. ____ Tropical timber
   - n. ____ Annex tables and reference

3. Do you have any suggestions for topics and authors of future special chapters?
   Current market issues ECE region or non-ECE region country focus

4. How did you hear about the *Review*? _____
5. Did you download the WWW-version of the *Review*? Yes _____ No _____
   If yes, and you wish a printed version, please send a postal address.
6. The future of French and Russian translations is being discussed. Do you need this publication in either French? Yes _____ No_____ or Russian? Yes _____ No _____
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8. Do you have any suggestions for improvements to either the paper or electronic version of the Review? _____

_____

Thank you again for your time in assisting us to improve the Review for our readers! Please return your survey to: info.timber@unece.org or by fax to: +41 22 917 0041

The *Forest Products Annual Market Review, 2001-2002* provides a comprehensive analysis of the UNECE region, including the Commonwealth of Independent States, Europe and North America. The *Review* covers forest products from the forest to the final consumer, i.e., from roundwood and primary-processed products to value-added products. Each issue includes extensive statistical information combined with an analysis of trends and developments. Standard statistics-based chapters are presented on sawn softwood, sawn hardwood, wood-based panels, wood raw materials and pulp and paper. Other annual chapters analyze markets for certified forest products, value-added wood products and tropical timber.

In addition, every year the *Forest Products Annual Market Review* contains a few special chapters highlighting market developments both within and outside the UNECE region. This year's special chapters are:

- Market effects of wood promotion;
- Forest products markets in Turkey;
- Forest products markets in Chile.

The *Forest Products Annual Market Review* and its predecessor publications have been published annually since 1948 by the UNECE/FAO Timber Section. Its goal is to provide the earliest comprehensive statistics and analysis on forest products markets. This information is intended for policy makers, researchers, investors and forest products marketing specialists in governments, research institutions, universities and the private business sector. This *Review* is intended as a background docu' for the UNECE Timber Committee's market discussions held at its annual session.

Further information about forest products markets, as well as information about the UNECE Timber Committee and the FAO European Forestry Commission is available on their websites (www.unece.org/trade/timber and www.fao.org/forestry/FO/STATBOD/Regional/Efc/efc-e.stm). Information about the UNECE may be found at www.unece.org and information about FAO may be found at www.fao.org.

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